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SOME PRESSING PROBLEMS IN ALLERGY

CHAIRMAN'S ADDRESS

J. H. BLACK, M.D.
DALLAS, TEXAS

In spite of the fact that the treatment of allergic conditions is fairly satisfactory, the fact remains that treatment is largely empiric. Advantage is taken of the fact that allergic persons frequently show skin reactions to their respective allergens to determine the specific allergenic substances, but there are many irregularities found in skin reactivity and the reasons for them are imperfectly understood. Treatment with the substance to which the patient is sensitive frequently produces good results, but there is still much room for argument as to the mechanism underlying the response to treatment. Some of the problems found in an attempt to explain these conditions are due to deficiencies in the knowledge of immunology in general, but some of them may be solved by careful, concerted study by the clinical investigator and the laboratory worker. In this field where animal experimentation may fail to reproduce human reactions, accurate observation of carefully controlled patients may provide the material for the solution of some vexing problems. A few of these problems which deserve attention will be mentioned.

BASIS FOR HEREDITARY INFLUENCE

One of the most definite findings in allergy is the hereditary transmission of "something." Since this frequently is not the transmission of the identical sensitiveness of parent to child as to either allergenic substance or location of the site of reaction, the usual statement made is that the inheritance is of a "tendency." This is a term used to represent an intangible thing and, of course, answers no questions. Would it not be possible to assume that this transmitted "tendency" has its basis in the transmission of some anatomic abnormality which may be just as definite as polydactylism and just as definitely conforming to the laws of inheritance? Would it not be possible to believe that persons are allergic because of an abnormal type of response that has its basis in abnormal function which, in turn, results from an anatomic variation? There is, of course, no present proof available for such an assumption, but to my mind it produces no greater strain on the imagination than to speak of a "tendency" and has the distinct advantage of reminding one that the search for a basis—anatomic, physiologic or chemical—should be kept in mind and offers a concrete goal toward which to work.

There has been no lack of attempt to explain allergic phenomena on an immunologic basis, but there is reason to believe that the treatment of a specific type of reaction, e. g., asthma, with the specific allergen is, after all, symptomatic treatment. The facts that multiple sensitivity is the rule, that persons become sensitive to one thing after another and that clinical sensitiveness is frequently the result of exposure to some particular allergen and, consequently, may be considered as accidental, all tend to call attention to the fact that the allergic person has a fundamental abnormality which may manifest itself in various ways depending on different conditions. That this fundamental abnormality is the same in all allergic persons and the different manifestations are more or less accidents is a possibility which deserves consideration. It may seem a rash prophecy, but it is not entirely impossible that at some time this fundamental condition may be determined and the treatment of all allergic persons then become the same.

RELATIONSHIP OF ENDOCRINE ORGANS AND INVOLUNTARY NERVOUS SYSTEM

Various observers have suggested the possible influence of one or another of the endocrine organs. Objection can be raised to these assumptions, and lack of substantial evidence can be shown in every instance. The involuntary nervous system also has been incriminated, but only a mass of conflicting observations and opinions has resulted. However, the fact remains that many of the phenomena associated with allergy may be duplicated by activity of one or another part of the involuntary nervous mechanism. There is certainly much evidence to support the belief that allergic reactions are mediated by the involuntary nervous system. Whether the relationship is even more fundamental than this deserves consideration. The low blood sugar, the low blood pressure and the slow pulse rate so frequently seen in allergic persons cannot be mere accidental happenings. Just what their significance may be needs to be investigated. More and more the conviction is growing that eosinophilia is a manifestation of autonomic nervous action. Its common association with allergic reactions surely has more than diagnostic significance.

RELATION OF REAGIN TO CLINICAL HYPERSENSITIVENESS

Emphasis has been placed on the immunologic aspects of allergy, and a great deal of discussion has been

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carried on regarding the place of allergy in the classification of the various types of hypersensitiveness. The finding of reagin in the blood of allergic persons has led to the assumption that this antibody is responsible for the clinical manifestations of allergy. Definite differences, on the other hand, from the anaphylactic antibody have led to a refusal of some workers to designate allergy as a type of anaphylactic reaction. Evidence which has resulted from clinical observation tends to question some assumptions regarding the reagins. If this antibody is responsible for the clinical manifestations of allergy, how can one account for reagins for substances to which the patient shows no clinical sensitiveness or absence of reagin in the presence of clinical sensitiveness? Or how may the persistence of reagin long after the disappearance of all evidence of clinical sensitiveness be explained? It may be assumed that differences in reactivity of the "shock organ" may explain quantitative differences between amount of reagin and intensity of clinical manifestation, but this will not explain clinical sensitiveness of high degree with a total absence of reagin. It is true that in a great number of allergic persons reagin may be demonstrated, but it is equally true that in a not inconsiderable number reagin cannot be found. It may not be amiss to say that this subject deserves further study.

Dependent on the conception of the rôle of reagin is the belief as to the mechanism of specific treatment. If the reagin is the antibody mediating clinical sensitiveness, treatment is not desensitization, since it has been shown that the reagin is not diminished but may actually be increased as the result of treatment. If the reagin is not assigned this rôle, the question of what is being done in treatment is still open for investigation.

REACTIVITY OF THE SHOCK ORGAN

Differences in location of allergic manifestations have led to the assumption that there is at least a quantitative difference in the allergic state of the shock organs. Two persons exposed in the same manner to equal amounts of ragweed pollen may react, one with hay fever and the other with asthma. It has been commonly observed, however, that in constitutional reactions resulting from over-dosage in pollen treatment, the patient who has had an uncomplicated hay fever may react with hay fever, asthma and urticaria. In other words, a shock organ which has not shown clinical evidence of sensitiveness may, by this method of introduction of allergen into the body, respond with a violent reaction. Is this due to the unusual method of entrance of the allergen which causes qualitative differences from the allergen as usually introduced? Or it is due to a low grade sensitiveness of certain shock organs which will react under the stimulus of a larger dose?

Not only must one speculate as to why the skin of some allergic persons reacts to a given allergen while the respiratory mucosa does not, but one is confronted with the fact that in some persons recurring reactions tend to appear at the same site or sites while other skin areas remain unaffected. This would lead one to suspect the possibility of sensitization of one shock organ alone, and, indeed, of only parts of this organ. Some confirmation of this opinion is found in the fact that in some persons showing localized allergic reactions of the skin, positive reactions to the allergen may be obtained in these areas and not in other parts of the skin. The possibility of sensitizing limited areas has been seen recently in a patient, sensitive to wheat by ingestion, who had a localized eczema on the arms. Fragments of bread were strapped on his forearm and neck—two locations showing no eczema. No reaction occurred. However, two weeks later when the patient ate wheat, patches of eczema appeared exactly defining the location of the patch tests. Apparently sensitization of the sites had occurred, though no reaction was apparent within two weeks of the use of the patch test.

LOCAL IMMUNITY OR SENSITIZATION?

It is not a rare experience to see a sharp local reaction to an injection of pollen if the injections have been made previously in one arm and a change is made to the other arm which had received no injections prior to that time. The usual explanation given is that repeated injections into the same site bring about a certain amount of local immunity—or tolerance—so that an increase in dosage does not cause increased local reaction. On the other hand, not infrequently one sees a patient in whom injections have been made in each arm alternately and in whom an injection into one arm brings about an edematous area at the site of a previous injection in the other arm. The usual explanation given is that the injections have brought about a local sensitization which may cause a reaction when circulating allergen, injected into the other arm, reaches the sensitized area. Is it possible, then, that injections of pollen can produce both immunity—or tolerance—and sensitiveness at the site of the injection? Or do injections of pollen sometimes sensitize locally and sometimes immunize? Information on this subject would be valuable.

RATE OF ABSORPTION OF ALLERGEN

Cohen and his associates have offered evidence to show that the reaction of passively sensitized areas occurs later in allergic than in nonallergic persons when the allergen is introduced through the nasal mucosa or parenterally. And, conversely, every one doing clinical work with allergic persons has had the opportunity of seeing a constitutional reaction appear with startling rapidity after an injection of pollen which could be shown not to have entered a blood vessel. An explanation of these contradictory findings may have a definite bearing on the mechanism of the allergic reaction.

SENSITIZATION TO NONANTIGENIC SUBSTANCES

Most immunologists have refused to classify as allergens nonantigenic substances to which hypersensitiveness may be shown, on the ground that the substance is nonantigenic, there is no demonstrable inheritance and no reagins are found. But the fact remains that reactions from these substances may be clinically indistinguishable from true allergic reactions, and these persons are, after all, specifically sensitive. If one patient is specifically sensitive to cow hair and, on exposure, develops asthma while another person, specifically sensitive to cow hair, on contact develops a dermatitis, even though it may be shown that the chemical fraction causing asthma is not the same as that causing dermatitis, there still remains the fact that both persons are specifically sensitive. After all, may not the fundamental mechanism be the same? A considerable experience with "contact dermatitis" demonstrates that the substances causing the skin reaction are more commonly not irritants to the normal skin, that repeated or prolonged exposures frequently

are not necessary to produce reactions and that the persons showing the lesions are specifically sensitized. Whether the present classification will stand under further investigation remains to be seen. Certainly when one remembers Sulzberger's experiment in which he was able to produce lesions in certain European guinea-pigs but could not similarly sensitize American guinea-pigs, the conclusion is forced on one that there may be conditions affecting the various manifestations of hypersensitiveness which so far have not been taken into account.

CONCLUSION

These points have been raised, not with the intention of disparaging the work which has been done, but to call attention again to the fact that there is a great amount to be done if work in allergy is to be placed on a scientific basis, and to remind the clinician as well as the laboratory worker that careful painstaking observation may assist in the solution of some of these perplexing problems.

THOUGHTS ON MEDICAL EDUCATION IN THE UNITED STATES

W. S. THAYER, M.D.
BALTIMORE

Nine and twenty years ago this very month it was my privilege to preside at the meetings of this section in this delightful city. The picture of that week is a bright spot in my memory. Two occasions stand out sharply against a background of fruitful discussion and unbounded hospitality. The first was the discussion on yellow fever at the opening session of the Section on Practice of Medicine. The second was the address of the President of the Association.

It had seemed to us important that the discoveries of the Yellow Fever Commission in Cuba should be impressed on the American medical profession. One of the three referees chosen for this discussion was a distinguished teacher, no longer young in years, who had made us somewhat uneasy by requesting that he be allowed more than his allotted time. Although he was a brilliant and scholarly man with a distinguished career and a wide experience with yellow fever, we had feared that, at his age, he might not be willing to accept demonstrations which seemed to us convincing, and when, at the last minute, one of his two colleagues failed us, it was an anxious moment. From the platform I wrote a line to Dr. Welch, who was in the audience, begging him to come to the rescue in the discussion. James Carroll was the first referee. Then his co-referee, a young man of mature years—for there was no younger man than he in the audience—arose. Fluently, within the time allowed him, he spoke of the relation of fomites to yellow fever infection, and pointed out the significance of the new work with a simplicity and a lucidity so convincing as to preclude all discussion. It was a masterly, and withal a rather dramatic performance, and no one who listened to Chaillé at that notable session is likely to forget it.

The other occasion was the address of the President, which was impressive, not only for the substance of the spoken words. The words were wise but the bearing, the physique, the face, the voice, the manner of the speaker made a lasting impression on more than one of the audience and deepened the feeling that was already ours, that this was no ordinary man. I need not say that the President of the Association was Frank Billings. His subject was "Medical Education in the United States." [1] In this address Billings set forth the broad ideals of the university school of medicine. Clearly and convincingly he pointed out that medicine, an applied science, should be taught in scientific fashion; that the instruction in such branches as anatomy, physiology, pharmacology and chemistry should be carried on in the laboratory by men who give their lives to teaching and investigation; that only students, salaried professors, could give such instruction; that furthermore, the study of diagnosis and treatment of disease should be carried out in special hospitals controlled by universities under the direction of

> professors of medicine, of surgery, and of obstetrics, with competent assistants, of the same type as the teacher of the fundamental sciences. . . . It is time, therefore, that the clinical teacher should have the knowledge necessary to carry on experimental investigation, with hospital facilities for the work that the profession may become purged of the shame of its helplessness in curing so many of the common diseases of mankind. In addition to the clinical teachers, who will devote all their time to teaching and research work in the special hospitals, there will be quite as much need for the clinical teacher, who is in private practice, in the general hospitals. . . . His rich and varied experience in hospital and private practice will enable him to round out the student's college education. . . . He will teach the student the art of medicine. . . . The present status of medical science requires and demands a university medical college course. By university medical college is meant a medical school which is directly connected with and a part of a university; the university fixing the requirements and controlling the admission of students to the medical department. The method of teaching both the fundamental and the clinical branches is on the principles outlined above. To properly prepare for such a course the student should have, as a minimum preparation, at least two years of study in a good college or university. The requirements to enter a good college or university would insure a sufficient knowledge of the ordinary school branches and also Latin or Greek. During the two years' course in college his time would be well spent in the study of English, French, German, mathematics, history, philosophy, physics, chemistry, general and organic, and qualitative analysis, comparative anatomy and general biology. The amount of time to be devoted to each of these subjects would be the same as that of students of general science, as arranged in all college curricula, with the exception of a much more thorough course in chemistry, biology, physics and comparative anatomy.
>
> So prepared, the medical matriculate would be able to grasp all the intricacies of the subjects of the fundamental branches of medicine. With the addition of the full medical college course as outlined above, his education would be equal in culture to that of the graduate in arts and philosophy. At the same time, it would be practical and especially fit him for his work as a scientific investigator or practitioner, or for both.
>
> With the medical profession so educated a physician would be, in truth, a member of a learned profession. From an educational point of view he would rank as an equal with the scholar in philosophy, law and theology. . . . As the direct agent by which the American Medical Association may exert its influence in the elevation and control of medical education, the Committee on Medical Colleges and Medical Education should be made permanent and should be given adequate power and sufficient annual appropriation to make its work effective.

These wise words were followed by a movement which has resulted in a great and general improvement of medical education in the United States, a movement

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The Frank Billings Lecture, read before the Section on Practice of Medicine at the Eighty-Third Annual Session of the American Medical Association, New Orleans, May 11, 1932.

1. Billings, F.: Medical Education in the United States, J. A. M. A. 40: 1271 (May 9) 1903.

in which this Association has played a highly honorable part. Largely as the result of this address and of the recommendations of the Committee on Medical Colleges, presided over by Arthur D. Bevan, this committee was succeeded in the following year by the Council on Medical Education and Hospitals. It is hardly necessary to mention the active and courageous campaign carried on by this Council under Bevan's leadership. Its surprising revelations are still fresh in our memory, as is the remarkable report of Abraham Flexner to the Carnegie Foundation.[2]

Already, it is true, in better schools, teaching in the preclinical branches was fairly well endowed, and, at the Johns Hopkins University, several clinical departments had been established on what might properly be called a university plane.

In the last three decades much that Billings set forth as desirable has been realized. Many inferior proprietary schools have disappeared. The great majority of the seventy-six schools of medicine recognized by this Association are connected with universities. The teaching of anatomy, physiology, chemistry and pharmacology in these institutions is almost entirely in the control of students who give their whole time to instruction and research, who are, in a true sense, university professors. In a considerable number of schools clinical departments have, in like manner, been placed on what is essentially a university basis, the director receiving a salary sufficient to free him from many of the anxieties of life and to relieve him, more and more, from the necessity of practice for the support of himself and his family. Relatively adequate salaries have made it possible for younger men to devote valuable years of their life to the study of special problems, or, as assistants in scientific or clinical departments, to acquire that experience which may qualify them for consulting practice, for clinical teaching, or for the direction of others in scientific research.

Materially, in buildings and equipment, our schools of medicine are second to none. Through the generosity of individuals and foundations for the furtherance of good works, laboratories and institutes have been established in and outside of the university, the scientific contributions of which are recognized throughout the world. The amount of scientific work done not only in institutes for research, but also in our schools of medicine, is really considerable. The volume of this work becomes more impressive when one considers the serious monthly medical publications of thirty years ago and today. In 1903, the *American Journal of Medical Sciences*, the *Journal of Experimental Medicine*, the *Journal of Medical Research*, the *American Journal of Physiology*, the *American Journal of Anatomy*, which had just begun its career, and a few other special magazines were the only serious American agencies for the publication *in extenso* of original investigations. Think of the amount of really good original work which appears today in the special publications of this Association alone.

The day has already come when students from the old world are turning to our universities and our laboratories as for years we have turned to theirs—a happy omen.

At the same time, an earnest effort has been made to raise the standards for admission to our schools of medicine. With the advances in medical knowledge and the increased application of the natural sciences, such as chemistry and physics, to the problems of physiology, normal and pathologic, the student of medicine must have not only a wider general education, but a more thorough understanding of the natural sciences. Some of our universities demand a degree of Bachelor of Arts or Science for admission to the school of medicine. Minimal requirements for admission to the approved schools of medicine have, for many years, been insisted on by the Council on Medical Education, requirements which demand a four years high school course and at least two years of premedical study in a college or university, in which special stress is laid on chemistry, physics, biology and English; a reading knowledge of one foreign language is strongly urged. The necessity of adequate clinical experience is more generally recognized. Such experience in the wards of the hospital during the undergraduate period, offered in but few schools thirty years ago, is now general, and eleven schools demand a fifth or clinical year. City and state hospitals are recognizing that their efficiency is increased and their reputation enhanced by opening their doors to university teachers and students, and university units for teaching and investigation in public institutions are no longer uncommon.

Sixteen states demand a year's experience as clinical intern in more or less carefully designated hospitals before granting an application for a licence to practise. More and more, state examiners are emphasizing practical tests of clinical ability; this is notably true of the admirable work of the National Examining Board.

It is really interesting to consider how much of Billings's program, if one may so call it, has already been realized:

The elimination of proprietary schools and the change in character of those which remain.

The almost universal relegation of preclinical instruction to salaried professors who give their entire time to teaching and investigation.

The widespread assumption of medical teaching by universities.

The building of university hospitals.

The affiliation of private hospitals with universities.

The organization of such hospitals on what might be called a university basis, in the sense of the centralization of responsibility and the giving of adequate salaries to the directors of clinical departments.

The establishment of university units in general hospitals.

The multiplication of endowed professorships, laboratories and institutes of research.

The adoption of higher standards of admission to schools of medicine.

The improvement of the character of state examinations for a licence to practise medicine, and the more general reciprocity between state examining boards.

The work of the National Examining Board.

Brilliant contributions to science and therapy have come from the laboratories and clinics of the medical departments of universities.

One need but mention:

The information we have gained on problems of metabolism in general.

The addition to our knowledge of food values and vitamins in relation, for instance, to rickets, pellagra, beriberi, xerophthalmia and the anemias.

The numerous contributions to our knowledge of the internal secretions of pituitary, thyroid, parathyroid, pancreas, adrenals, ovaries.

The brilliant therapeutic effects of insulin in diabetes, of liver extract and ventriculin in pernicious anemia.

2. Flexner, Abraham: Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching, New York, 1910.

The isolation of epinephrine, insulin, thyroxine.

Our steady progress in the comprehension of infectious processes in general.

These are but a few of the discoveries that are flowing from university schools of medicine.

There are, of course, critics of the modern tendencies in medical instruction—on the one hand, those who question the fundamental soundness of the methods themselves, and on the other hand, those who criticize the wisdom and efficacy with which we have administered or carried out our program.

Among the former group there have always been those who feel that we are attempting too much, who "point with alarm" to the diminishing number of country practitioners, and assert that it is difficult to conceive that a man with so good a general education as the medical graduate of today would willingly live the life which was led in the past by him who served the country community in the days of our fathers. These men earnestly ask whether we should not have simpler schools with a shorter course and less severe requirements to provide doctors of a simpler class for such communities.

And then there are the others who feel that with the increased demands for admission to schools of medicine too many men with qualities which might easily admit of their becoming useful practitioners are definitely shut out from a medical career because of their lack of means.

While I respect the sincerity with which both of these objections are often made, I cannot feel that they need serious consideration. In the first place, in many regions improved means of communication have made good medical attention available as never before. In distant rural districts the remedy is surely not to be sought by providing inferior men.

These are problems which must be considered and met by community, county and state. The medical profession will be found ready, as it always has been, to do its share. The occasional local controversies between physicians, individual and in bodies, private charitable foundations and state agencies are deplorable for the moment, but usually settle themselves in the end for the public good, for the very simple reason that, at heart, all are working toward the same end.

The second fundamental objection is one which always excites one's sympathy. Who can tell what boy, had he had every advantage, might have accomplished great things? All that we can do is to support the best possible system of schools, to offer the best opportunities we can. Nothing which we can do can prevent boys improperly educated from desiring to study medicine when it is too late. Nothing can prevent the occasional heartburnings. It is clear today that preparation for medicine demands a more thorough and careful education than has been given in the past. This is really not a matter for dispute. That this is not understood by the public at large is sad, but to a certain extent inevitable. In our public schools proper opportunities should be open to those able to avail themselves of them.

This great reorganization, for such it really is, of our methods of medical instruction, has, of itself, naturally given rise to new problems, a few of principle, many of detail.

Some of these relate to the teaching of the preclinical subjects. In the old days the instruction in anatomy and physiology, in the hands of men who were active practitioners, was very largely of an applied or practical character, the instructor having in mind, mainly, the relations between the established truths or accepted hypotheses which he was demonstrating, and the practice of surgery or medicine. Today the professor of physiology or of anatomy is generally a student and investigator working or directing work on scientific problems. Not infrequently such a man does not even hold a medical degree.

The first two years of the instruction in the modern medical school is given largely to anatomy, physiology, chemistry and perhaps pharmacology. When the student begins his studies of diagnosis, medical and surgical, his ideas of topographic and applied anatomy are vague. When, in the laboratory, he studied the tendons of the wrist, he had little thought of the application of this knowledge to surgical practice; when he begins, clinically, to examine the blood, not only is the procedure new but the histology itself comes to him almost as a new subject. When in connection with the study of pathologic changes of function, the student begins to consider physiologic problems in the human being, the relationship of that which he has observed in the laboratory on animals a year previously is by no means always clear.

The criticism is common that teaching of applied anatomy and physiology is neglected in the preclinical departments, that the professors of anatomy and physiology should always be surgeons or physicians, and that, in a medical school, instruction in anatomy and physiology should be carried on from the outset with an eye to their relation to medical and surgical problems.

There is truth in the assertion that the division between the abstract scientific and the applied clinical teaching is too sharp in most of our schools. I hope that one day this may be remedied. It seems to me, however, that the remedy lies not in changing the character of our departments of anatomy and physiology but in better cooperation. The teaching of topographic and applied anatomy and of applied physiology, such, for instance, as the demonstration of the percussion of the outlines of organs in the living human being, of the methods of appreciating the respiratory sounds or those produced in the cardiovascular apparatus and their physical explanation, are not, and should no longer be regarded as the duty of the anatomic or physiologic department. They should be taught by the clinical departments in closer cooperation with instruction in the preclinical branches than they now are. The day must come when, in well-ordered schools, study of the anatomy of the heart and lungs may be accompanied by the demonstration to the student of methods of determining these things clinically; when, for instance, in association with the consideration of the physiology of the respiration, the physics of the circulation and the character of the heart sounds, the student may make use of the ordinary clinical procedures by which we explore these functions. There are opportunities here for better cooperation.

I am not, however, in sympathy with those who would turn back to the old methods of teaching anatomy and physiology as purely applied sciences. One of our main objects should be to impress on the student that the clinician must reason for himself in a scientific fashion. The instruction in the preclinical branches in the modern university school should be carried on in such fashion as to exemplify Lowell's wise expression:

"self-education under guidance." President Ames [3] has well said:

> The primary duty of the university to a student is to provide such instructors that he is made to realize that the responsibility for progress is his own, no one else's. He must receive a certain amount of fundamental instruction; he must be given the technique of his field of study, he must be allowed to secure his information by himself, and largely in his own way; he must learn to look upon his field as one which has no limits and in which he must walk alone; . . .

These lessons should be inculcated from the very beginning of the student's medical instruction. Mall was one of the greatest teachers that I have known; but in his lifetime a common criticism of Mall was that he did not teach. He did teach anatomy as a science. He taught his students to stand on their own feet and think with their own heads. At the same time his laboratory and his material were always wholly at the service of the medical and surgical departments on which, properly, it seems to me, lies the duty of the teaching of applied anatomy and physiology.

I am not inclined to feel that it is in any sense necessary for a professor of anatomy or physiology to be the holder of a degree of Doctor of Medicine, although I believe it to be wiser and better that he should. The intelligent man who has been through a regular medical course certainly loses nothing by it, and gains a better appreciation of the problems which his students are to confront later in life.

I am therefore not in sympathy with those who criticize fundamentally the teaching of anatomy and physiology by men who are not Doctors of Medicine. While, other things being equal, a medical degree is desirable, it is not the degree that is important, it is the man. That the professor should be an unselfish, scholarly investigator with a human interest in his students and the capacity of stimulating them in their work—that is the essential point.

There has been a good deal of criticism of the idea of the university school of medicine based on the assumption that the teaching of the clinical branches may be too exclusively delegated to men who are rather investigators than clinicians, and that, in university schools, there has been a tendency to appoint to clinical professorships young men of scientific enthusiasm who have not had the experience necessary to give them a sufficient competence in their clinical methods; that these men, in some instances, have been so far overwhelmed by their administrative duties that, with a relatively small clinic, and deprived of the constant association with their colleagues which comes to the active consultant, they have failed to acquire the clinical skill and authority which is desirable. It has been urged that, in some university schools and hospitals, the opportunities in the way of beds and ward service for those clinical associates who should be called on in the teaching, opportunities which are necessary for the construction of an adequate teaching staff, have been deficient.

There has been, here and there, some justification for such criticism. It has not always been recognized, as it should be, that a well balanced staff, which should include a group of the best clinicians in the community, is quite necessary for the university school of medicine.

There have been institutions which have started with clinical advantages so limited as to provide only for the kernel of the university staff. This, as I have pointed out elsewhere,[4] has resulted in putting on younger and less trained members of the university staff, clinical duties which they were not yet qualified to fill, duties which have, at times, placed on them so great a burden as to interfere seriously with the opportunities to round out their own clinical experience in an orderly fashion and without undue strain.

Again, sometimes, professors appointed too early to positions of heavy administrative responsibility have developed into administrators rather than physicians, teachers or investigators, and a few classes of students have suffered from lack of adequate clinical instruction.

But only Pallas Athene sprang perfect from the head of Zeus. Perfection is not of man. Man's creations ripen slowly and, as man and his surroundings are ever changing, the plan which we devise for tomorrow is already incomplete by the time it is put into effect. Most criticisms that have been made of the university school of medicine have to do with defects of detail, not of principle, and where errors have been recognized they are being corrected.

The placing of the responsibility for the direction of the clinical branches on university professors whose main interest is in the development of their departments has been an unmixed blessing. The necessity for an adequate clinical staff in the university medical school is becoming generally recognized. Such a staff is far better selected by a university professor than it used to be when it flowed automatically through channels walled in by rigid rules of seniority and order of progression.

There is still room for better cooperation between university and public and private foundations in the establishment of university clinical units in general hospitals. But general hospitals are rapidly coming to realize the value of the university unit to the public, and it will not be many years before our city, state and private institutions are as generally utilized for medical instruction in this country as they are on the continent of Europe.

A criticism occasionally made of modern medical instruction is that the multiplicity and refinements of newer diagnostic methods have brought it about that the systematic teaching of the simpler procedures of physical diagnosis by experienced men has been somewhat neglected. The basis of the diagnostic art lies in the ability of the practitioner to use his five senses and properly to reason on his observations. Accurate training in those clinical procedures which can be practised without instruments or with such simple instruments as those used in auscultation and percussion, and in the ordinary routine examination of eyes, ears, throat, blood, and of the secreta and excreta, is fundamental. The art of using one's eyes and ears and hands skilfully, and of reasoning intelligently on the information so gained, the art of physical diagnosis in the stricter sense, can be attained only by the efforts and experience of the individual; it cannot be gained by reading books or listening to lectures. But it is not likely to be attained by the individual without assistance; it is not likely to be attained unless the student is, to a considerable extent, guided by teachers who, themselves, are adepts. In these days of more or less necessary specialization, the physician whose main interest lies in the chemical or bacteriologic or serologic problems of pathology—I use the word in its proper sense of the

3. Ames, Joseph S.: Address on Commemoration Day, Feb. 22, 1932, to appear in Johns Hopkins Alumni Magazine, 1932, vol. 20.

4. Thayer, W. S.: Remarks on the Occasion of the Dedication of the Colorado General Hospital and School of Medicine on Jan. 23, 1925, Colorado Med. 22: 158, 1925.

study of disease, not pathologic anatomy—is not likely to be a skilled physical diagnostician as well. It is important, necessary indeed, that the student should be led into his study of physical diagnosis by experienced and expert diagnosticians. Such training requires considerable time. This is a part of the medical curriculum which cannot be restricted. In like manner the simple laboratory methods referred to above, methods with the technique of which every physician must be thoroughly at home, cannot be taught by demonstration. The student must practise them himself under the observation and control of experienced teachers and should be required to satisfy his examiners of his thorough familiarity with them.[5]

The teaching of physical diagnosis is not merely a question of the inculcation of a technique; the student should be led systematically to work out for himself the diagnosis of each one of the important pulmonary and cardiac lesions from signs observed by him or elicited by his technical skill in auscultation and percussion and interpreted by sound physical reasoning on the basis of his own pathologic knowledge.

It may be true that in some modern schools this fundamental training has been somewhat neglected because of the multiplicity of newer diagnostic refinements the application of which is easy and convenient in the university hospital but difficult in private practice. Important as these refinements may be, they are but complementary to the information gained by a thorough physical examination, and valueless to him who cannot stand on his own feet. Every graduate of medicine should be adept in the art of physical diagnosis and at home with the simpler laboratory technique.

A criticism of American medical teaching which is not uncommon is that we are bound too closely by rigid curricula. In the continental universities the student approaches medicine in an atmosphere of freedom. He is not hampered by the necessity of following his course in a class which is subjected to examinations at stated intervals, which flows through the school, as it were, in a stated number of years, with which he must keep pace under the penalty of being obliged to abandon medicine—for it is almost this. While the amount of work which he must do is prescribed, yet he may pursue his studies as deliberately as he will. With us he is treated almost as a schoolboy and must pass, in a prescribed period, through a prescribed course. This has seemed to some[6] unfortunate, and many have looked forward to the day when the student may take his time, passing from school to school as he will, and pursuing his course under such instructors as he may choose.

This has not been possible in the past, owing, largely, to the lack of standardization of our schools, and because in many, with the limited clinical advantages, the class system is necessary, for the size of classes must be limited. Gradually this, too, is changing, and already, among the better schools of medicine, men in good standing find it easier to move from school to school; but it has not been possible as yet to abandon the class system. Another defect of the class system is that, with a four years course, it is quite impossible to cover so large a part of the field of medicine as one would. It is a pity that, if the student so desires, he may not spend a longer period as an undergraduate and give more time to the study of special branches of medicine or surgery before taking his degree. In a four years course, however, we can offer opportunities to acquire a good basis only in the main branches of medicine, and, as it is impossible to give more than a smattering of instruction in *all* the special branches, there must be a good deal of elective freedom. In some schools this has been extended to a considerable degree.

Interestingly enough, the response of students to this increased elective freedom has brought home to some observers the relative immaturity of our students, and has impressed on them the realization that, with our present premedical requirements, the student who enters even our better schools, is, very often, at a stage of educational and mental development in which he needs careful guidance and advice as to the character and sequence of the courses which he selects.

This has been emphasized by Rich[7] who wisely, points to the deplorable lack of significance of our American A.B. and S.B. degrees which are accepted as qualification for admission to some schools. We have been in the habit of assuming that he who has the degree of A.B. is necessarily an individual with the basis of a liberal education, and of a maturity which should enable him to plan his course in life with assurance.

Too often he is rather immature, commonly with an imperfect grasp even of his own language; frequently he has not yet learned how to work and is sadly in need of guidance. This is due to two main circumstances: First, in the words of Flexner,[8] "Intellectually and culturally we are not on a par with older nations, and we could not possibly be." The proportion of young people who have been brought up in an atmosphere of culture and scholarship is much smaller here than in England and France.

Second, the standards of our teaching in primary and secondary grades are below those of European schools. How many of us in this hall were taught in our early years by scholars?

The change will come with time, but, at the moment, we have to do in our universities with boys considerably less mature than those of the same age in Britain or on the continent. Self assurance is sometimes an evidence of youth. "Sophistication is not education."[9] We may like to think of them as men qualified to plan and choose their own course. Often they are not. Many need not only guidance, but supervision.

When the time arrives that secondary teaching becomes recognized with us as a dignified career commanding a proper stipend; when, in our public and private schools, our boys begin to come under the influence of scholars whose heart is in their work, rather than young men and women teaching more or less up to the limits of their knowledge, then the change will begin—and not until then.

In the meantime, without abandoning our ideals, we must recognize existing conditions. I agree with Rich in feeling that, while giving to our students so much liberty as is possible, we should not fail to see to it that they are carefully advised and guided through the too short years of their undergraduate study.

5. No student should be allowed to graduate who is not skilled in the preparation of, and familiar with the examination of, specimens of fresh blood—a procedure as simple as it is important, an essential part of the initial examination of every patient, which can be carried out at the bedside or in the consulting room in a few minutes; a procedure which is almost forgotten in some modern clinics.

6. Thayer, W. S.: Observations on the Teaching of Clinical Medicine, St. Louis M. Rev. **58**: 37, 1907; Proc. A. Am. M. Coll. **17**: 101, 1907.

7. Rich, A. R.: Reflections on the Relation of the Curriculum to Certain Problems in Medical Education, Bull. Johns Hopkins Hosp. **49**: 121, 1931.

8. Flexner, Abraham: Failings of Our Graduate Schools, Atlantic Monthly **149**: 441, 1932.

9. Rutledge, B. H.: In conversation.

Further, it is extremely important that in selecting university professors we remember that while occasionally a berth must be reserved for the rare student and investigator who needs protection and, as it were, an asylum in which to pursue his exceptional research, yet, in most instances, the abilities of the candidate as an inspirer and a leader of men, as a teacher in the best sense of the word, his character and his personality should never be forgotten. Not for his discoveries or his publications alone should a man be made a professor of medicine.

Perhaps I may be forgiven for speaking here of another element which is commonly deficient in the education of most American students of medicine. This carries us again outside of medical teaching proper, back to the common school. I shall, however, try to show that it has an influence on the capacity of the student to make the most of his opportunities in the school of medicine as well as in his broader human relations. I refer to the imperfect training of our youth in ancient and modern languages. I may approach the question from a standpoint which will seem to some to be far-fetched.

The better American medical literature has, in the past, been especially notable for its freedom from Chauvinism and from those odious and petty and childish quibbles as to priority which are so common in some communities. This happy characteristic of our literature has, I think, been in part due to the beneficent influence of the Surgeon General's Library with its *Index Catalogue* and the allied *Index Medicus*. We have usually been familiar with the literature, and we have given credit to foreign authors.

There has been another influence which has helped to bring this about, namely, that so large a body of young men who, later, have become productive students, have spent considerable periods of time in European universities and hospitals, thereby acquiring familiarity with foreign languages and literature, and, especially, forming close and cordial relations with their European and Asiatic confrères. The number of American medical students in continental universities has been traditionally large. To the student of medicine the chief value of a sojourn in foreign clinics is, precisely, the familiarity which he acquires with the language, the characteristics, the habits and the point of view of other peoples, and the personal acquaintance with foreigners who have like scientific or artistic interests.

But a few years ago the opportunities in clinic and in laboratory in the great European centers were so much better than in this country that it was highly desirable, if not necessary, from the standpoint of the scientific advantages alone, for the American student to seek the benefits of foreign study. Today, in a general way, these opportunities are as great here as in Europe, and while many American students travel, a relatively large proportion of them spend so short a time abroad that they fail to gain that familiarity with European methods and languages which was acquired by the fortunate few in the past. The number of young American medical men who come back steeped in the traditions of the continental centers, and with the foundations of life-long friendships, is relatively smaller than it was forty or fifty years ago. This is not as yet offset by the gratifying number of foreign post-graduate students who are seeking our clinics and laboratories. These international social relations between medical men are of more than mere medical value. International professional relationships play a real part in bringing closer together the peoples of the world.

Is it not, then, important that we should bear in mind the value of international cooperation in medicine, that we should make every effort in our schools and colleges, that he who is preparing for the study of medicine may acquire a better linguistic foundation? Ought we not to look to it that the circumstance that our standards of medical education are higher, and that important original investigations are being carried on in many centers in this country shall not lead us to a subconscious sense of independence of the work done by our colleagues on other continents? Should we not make every effort to insist on a knowledge of French and German, to impress on the student the desirability of cooperation with workers in other countries, the value of the establishment of direct relations with them and the duty of familiarity with and recognition of their work?

The barrier of language is a sad hindrance to progress; it is, alas, responsible for many of our international misunderstandings, personal, political, scientific. Most men have much in common. When we meet and commune freely, one with another, we quickly find points of contact, and very often conceive a sincere admiration for those elements of special excellence which we are sure to discover in our neighbor. Fatally separated by the barrier of language, we are very likely to be as jealous and suspicious as dogs—for men are singularly like dogs. The serious student of medicine should be able to read, in the original, the important literature and textbooks in French, German and English.

Is not this largely provided for by the higher requirements for admission to our medical schools? Is it not true that far more students read French and German today than in 1903? Do not the requirements to enter a good college or university "insure a sufficient knowledge of the ordinary school branches and also Latin or Greek?" Alas, I fear that this is far from true.

The currents and countercurrents in modern education are baffling. Along with the improvement of our schools of medicine and the increased cultivation of the natural sciences, there has been in this country and, to a considerable extent in other countries, a remarkable neglect of the teaching of languages in the early school years. This is not the place to enter into a discourse on the teaching of language, but it may not be out of the way to observe that from fifty to seventy-five years ago the early teaching of the classics, especially Latin, supplied to those who sought a good general education, as it does in the better European schools today, that fundamental understanding of grammatical principles which went so far toward improving their comprehension of the niceties of the mother tongue, quite apart from its cultural value in other respects.

An early familiarity with the classics, acquired in his youth, gave the student of the middle of the last century an innate sense of the significance of those roots on which, for convenience's sake, is based our entire scientific terminology, precisely in order to make it more comprehensible. For at that time and for many centuries a certain acquaintance with Latin and Greek was the common possession of all educated men. To the boy who studied the classics, especially Latin, early in his career, the study of English grammar was unnecessary and superfluous. I remember well my mother's surprise and indignation when she found that, at a little private school to which I was sent fifty-eight years

ago, instead of beginning the study of Latin I was to be taught English grammar. By the young languages are acquired naturally and easily. The early study of Latin is the very best way to improve one's English and to make easy the comprehension and acquisition of foreign languages, especially the Romance languages. Latin, properly taught, is not a dead language.

Within a few generations the teaching of the classics has been so far abandoned in this country that it is really difficult, if not impossible, to find suitable teachers for many schools in which Latin and Greek are still taught.

The abandonment of the classics is, probably, in considerable part responsible for the relative immaturity of the American youth of today; it has led to some amusing manifestations. Ignorant of the classics, unaware that Latin was but yesterday the common language of science, confused by scientific terminology, worthy men [10] now and then call for its simplification, suggesting that scientific terms be translated into the vernacular. At the same time, annoyed by their incomprehension of foreign tongues, when they seek to read the works of others, they propose, in bland and blessed innocence, the re-creation of that which their fathers threw away, a common language of science.[11] In two generations we have come full circle!

It may be paradoxical but it is true that along with our increased self-sufficiency from a medical standpoint, with the abandonment of the fundamental teaching of the classics, with the increasing nationalism which has followed the World War, the ability to read French and German which has always been required of students in the school of medicine with which I am connected has become less general. Thirty years ago the only textbook which I used in one of my courses was a German work which had never been translated into English. This would scarcely be possible today. Whatever our attitude may be toward the teaching of the classics, it is of the greatest importance that we insist on a reading knowledge of French and German in our students.

With regard to the classics: As one whose fundamental classical education was but mediocre, but as one who has associated from boyhood with those whose classical foundation was good; as one who has lived in a period in which the classics are sadly neglected in our public, as well as in most of our private schools, I have no hesitation in saying that in my opinion the early study of the classics under scholarly teachers is time saved, not time wasted, for one who would have a good general education; there is no better mental training, and the introduction, through the classics, to the history and traditions of European civilization is of unique cultural value.

There is no training better for him who is to pursue a scientific career than that which leads to the early acquisition of the rules which govern the grammatical construction of Latin and Greek and, secondarily, of our own tongue. The neglect of the classics has not improved the use of English by the present generation. Language is the mirror of thought.[12] He who is incapable of expressing his thoughts clearly is incapable of thinking clearly. Subtlety of thought and subtlety of language are one. "The man of science," says Clifford Allbutt, "ought best to know that style and matter can no more be dissociated than skin and bone; that if we write clumsily, loosely, or disjointedly our thoughts are accordingly." [13] Nothing has been substituted for the early study of the classics that takes its place from a disciplinary standpoint. No time need be lost. The basis of the understanding of language and the conceptions which go with it was, should be, and may easily be laid before the age at which the study of the natural sciences can profitably begin. It is very largely the early teaching of the classics and the early and careful attention given to language that distinguishes European secondary education from ours.

Here in America we shall have to begin again. There are few secondary schools in which the classics are adequately taught today, few universities in which the classics are taught other than as a subject for philological, historical, or archaeological research or for the training of teachers.

I should not be surprised to see the development before long, among secondary schools, of special centers in which more attention is given to the early and thorough teaching of the classics. I am inclined to think that training and discipline in language will become more generally recognized than it is today as a necessary requirement for him who is to enter on a scientific career.

Prompted by a consideration of the words of our dear friend and master, I have indulged in a few reflections on modern American medical education. We have seen how many of the reforms that he foresaw and advised have come to pass. May he who has played so large a part in this progress long be spared to guide us with his wise counsel!

10. Within a few months an amusing editorial on this subject appeared in one of the leading New York daily papers. The writer seriously complained of the barbarous and incomprehensible terminology of medicine.

11. In the Baltimore Sun of Feb. 20, 1932, there was an item with a rather flaring headline, "Universal Language Discussed," in which the statement is made that Dr. Alfred D. Flinn, director of the Engineering Foundation of New York City, "in a recent 'Research Narrative' of that organization" has set forth "specifications for a new universal language for scientific, political and business purposes. . . . The sounds of the new language should be easily learned by either children or adults, by personal instruction or by mechanical aids such as sound pictures or phonograph records. Grammatical forms should be simple and uniform. . . . Exactness and clarity are the chief necessities, leaving to existing languages the expression of emotions in poetry, literature and drama. . . . One specification yet to be decided, Dr. Flinn tells, is how low a level of average intelligence the new language needs to fit."

12. Compare with the maxim of Publius Syrus. "Sermo animi est imago: qualis vir, talis et oratio est." Phaedri, Augusti Liberti, Fabulae Aesopiae ex optimis exemplaribus emendatae, accedunt Aviani et anonymi veteris fabulae. Publii Syri sententiae, etc. Argentorati, ex typ. societatis Bipontinae, MDCCCX, p. 193, line 848.

Also Seneca, Lucius Annaeus. "Imago animi sermo est; qualis est vir, talis oratio." Proverbia de moribus secundum ordinem alphabeti, Paris, Georges Mittelhus, Circa 1487.

13. Allbutt, T. Clifford: Notes on the Composition of Scientific Papers, London, The Macmillan Company, 1905.

Proposed Postulates for Filtrable Bacteria.—In order to truly demonstrate the principle of a cycle between filtrable and nonfiltrable—or, more exactly, large and minute forms of a morphological cycle, we would set up the following postulates: (1) It must be possible to filter a suspension of a well defined pure culture of bacteria through a filter which holds back the characteristic forms; and these original forms should not appear in the filtrate or in cultures made with adequate amounts of the filtrate on suitable media after incubation of at least two or three weeks. (2) There must be evidence of growth of some kind in cultures made of this filtrate, but without evidence of the presence of the original normal forms. (3) The culture of the filtrable or minute form must be carried in a series of several generations. (4) It must be possible to recover the normal forms from such successive "filtrable attributes." Such requirements have not, as far as we know, been fulfilled by Mellon, by Rosenow or by Kendall, who are among the chief protagonists of the existence of filtrable stages. They have been reported, we believe, only by Hadley, who gives details in regard to his Shiga bacillus filtration, but this work has not yet been sufficiently confirmed.—Zinsser, Hans: On Postulates of Proof in Problems of the Bacterial Life Cycle, *Science* **75**:256 (March 4) 1932.

PAINFUL ANEURYSMS OF THE AORTIC ARCH

RELIEF BY PARAVERTEBRAL INJECTIONS OF PROCAINE AND ALCOHOL

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Aneurysm of the arch of the aorta, when it begins to erode the sternum and to compress the structures at the apex of the thorax, may give rise to excruciating pain. It is then a most distressing condition and one which the physician has been able to do very little to alleviate. Mere palliation of this agonizing pain gives the greatest comfort to these sufferers. But patients in the terminal stages of aortitis are no candidates for radical neurosurgery, so that any surgical intervention must involve the minimum operative shock. Such cases probably constitute as poor operative risks as advanced cases of angina pectoris. The statistics of cervical sympathectomy in the latter condition reported by Fontaine [1] and Cutler [2] show a mortality of from 8 to 21 per cent. On the other hand, paravertebral injection of the upper thoracic sympathetic ganglions, first described by Mandl [3] and further developed by Swetlow,[4] White,[5] Woodbridge [6] and others, has recorded to date a series of more than 100 cases with no mortality and very satisfactory results. I [7] have felt from the beginning that the fundamental effect of this procedure was the blocking of afferent painful pathways. With an experience in twenty-five cases of angina pectoris and believing that the nerve supply of the aortic arch is very similar to that of the heart, it was a natural step for me to try the effect of paravertebral injection in cases of painful aneurysm.

I [7] have recently reviewed the anatomy of the pain pathways from the heart and upper aorta. Briefly, afferent impulses leaving the heart and proximal aorta may follow two different routes: they may either ascend the middle and lower cardiac nerves to the corresponding cervical sympathetic ganglions, whence they descend in the sympathetic trunk to the upper dorsal ganglions, or run directly across the posterior mediastinum to these same ganglions. Thence the impulses traverse the white rami communicantes to enter the dorsal root ganglions of the upper thoracic spinal nerves. From this point, according to the theories of Head and Mackenzie, conscious pain is referred to the corresponding dermatomes and carried to the sensorium over somatic afferent pathways. It is therefore evident that the most accessible point at which these visceral pathways can be successfully blocked is the upper dorsal sympathetic ganglions or their white rami.

Surgical experience has shown that cutting the vagi or the intercostal nerves has no effect on cardiac pain, and also that removal of the entire cervical sympathetic trunk is frequently ineffective. On the other hand, resection of the upper thoracic ganglions has been uniformly successful in four cases reported from this clinic; [7] and in each case in which objective evidence has shown a successful injection of these structures, the pain of angina pectoris has disappeared.

Evidence acquired by the application of paravertebral alcohol block to three cases of painful aortic aneurysms has shown it to be effective. In reporting these cases I shall not attempt to detail the method of paravertebral injection, which is explained in Labat's textbook [8] and in the papers already referred to. It would be well, however, to mention the value of preliminary injections with procaine, to determine which segments carry the painful stimuli, prior to the injection of alcohol. Diagnostic injection of the sympathetic rami and ganglions with procaine, as described elsewhere,[9] has proved to be of the greatest value in this condition, as the pain was referred over a large number of dermatomes and yet could be blocked by infiltrating only the upper two thoracic ganglions and their communicant rami. In each instance there was an immediate cessation of pain, and injection of alcohol was therefore limited to these two segments.

REPORT OF CASES

CASE 1.—James E. B., aged 48, a native American railroad conductor, contracted a penile chancre in 1901. He had no treatment until 1926, when he first noticed pain in his right shoulder and dyspnea on exertion. A Wassermann test of the blood was then strongly positive. Physical examination showed his heart to be enlarged to the left and downward. There was a loud systolic murmur at the base, transmitted into his neck, as well as loud systolic and diastolic murmurs at the apex. The ascending aorta was expanded into a large aneurysm, with some dilatation of the innominate artery as well.

Subsequent to this examination he was followed in the outpatient department and treated with potassium iodide, quinine bismuth iodide, and mercurial ointment. He found lighter work as a railroad clerk and felt well until June, 1929. He then began to be troubled by palpitation on exertion and periods of syncope. Three weeks before his admission in January, 1930, he caught cold and developed a dry hacking cough. A week later he began to suffer extremely from pain behind his right ear, running down his neck over the right shoulder and upper part of the chest. This pain was constant and burning in character and became intolerably severe when he coughed. His cough became dry, nonproductive and brassy.

The patient was obese, with a cyanotic, swollen face. There was a bulging pulsating tumor rising above the right side of the manubrium and the medial half of the clavicle. The heart conditions were similar to those at his previous examination. The right radial pulse was greatly diminished, and blood pressure reading on the two sides showed a pressure of 85 systolic and 70 diastolic on the right and 115/80 on the left. The Wassermann and Hinton tests of the blood continued strongly positive. Roentgen examination showed a great increase in the size of the aneurysm, which now involved the entire ascending aorta and the beginning of the great vessels (fig. 1).

Antisyphilitic measures having been pushed to the limit without relief, it was essential to do something to palliate the pain. The wide area over which this pain was referred is shown in figure 2. From this it is apparent that the segments involved extended from the first cervical to the third dorsal. As there were no previous reports in the literature, it was necessary to determine in the first place whether the painful impulses were transmitted over the cervical and upper dorsal spinal nerves, or whether they entered the cord through the

From the Surgical Services of the Massachusetts General Hospital.

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5. White, J. C., and White, P. D.: Angina Pectoris: Treatment with Paravertebral Alcohol Injections, J. A. M. A. **90**: 1099 (April 7) 1928. Mixter, W. J., and White, J. C.: Alcohol Injection in Angina Pectoris, Ann. Surg. **89**: 199 (Feb.) 1929. White, J. C.: Angina Pectoris: Relief of Pain by Paravertebral Alcohol Block of the Upper Dorsal Sympathetic Rami, Arch Neurol. & Psychiat. **22**: 302 (Aug.) 1929; Angina Pectoris: Treatment by Paravertebral Alcohol Injection or Operation Based on the Newer Concepts of Cardiac Innervation, Am. J. Surg. **9**: 98 (July) 1930.
6. Woodbridge, P. D.: Therapeutic Nerve Block with Procaine and Alcohol, Am. J. Surg. **9**: 278 (Aug.) 1930.
7. White, J. C.: The Cardio-Aortic Nerves, New England J. Med., to be published.
8. Labat, Gaston: Regional Anesthesia, Philadelphia, W. B. Saunders Company, 1928.
9. White, J. C.: Diagnostic Novocaine Block of the Sensory and Sympathetic Nerves, Am. J. Surg. **9**: 264 (Aug.) 1930.

sympathetic rami. In the former case laminectomy and section of multiple posterior roots would have been necessary, a procedure which the patient would obviously not have tolerated. On the other hand, if the pain traversed the sympathetic nerves, the point of entry into the spinal cord would be concentrated in the upper dorsal segments, as explained in the beginning of this article.

Feb. 7, 1929, diagnostic blocking of the first and second dorsal sympathetic ganglions clearly proved this to be the case by relieving his pain entirely for thirty-six hours. Five cubic centimeters of 95 per cent alcohol was then injected paravertebrally into each of these areas. This produced a small band of anesthesia reaching across the upper part of the back into the axilla, which disappeared in two weeks. There were no troublesome sequelae. The patient was totally relieved of all his pain and was discharged two weeks later.

Fig. 1 (case 1).—Aneurysm which involved the ascending arch of the aorta and the origin of the great vessels in the neck.

He remained free from pain for four months. He then reentered the hospital decompensated and died suddenly of rupture of his aneurysm. An autopsy was performed and showed a huge aortic aneurysm which had ruptured anteriorly. Examination showed two small retropleural scars about 1.5 cm. in diameter. These surrounded the first and second intercostal nerves at their point of emergence from the intervertebral foramina, their communicant rami, and the corresponding sympathetic ganglions. While the intercostal nerves themselves and the ganglions did not show histologic evidence of degeneration, the communicant rami appeared to have been destroyed.

CASE 2.—Antonio C., aged 54, an Italian farmer, who had always considered himself well and strong, had, however, noticed a penile sore at 18, which had been treated only by local applications and pills. Seven months before admission he noticed a slight cough and then twinges of pain in the left side of the chest accompanying the cough. The pain shortly began to radiate down the inside of his left arm, to the left scapula, and both sides of the neck. During the past three months the pain increased to a steady discomfort over the regions noted. Three weeks before he had noticed a swelling of the upper left part of the chest, which became tender and sensitive to touch. He was brought in to the outpatient department, where a diagnosis was made of late syphilis with aneurysm of the transverse arch of the aorta. Local examination showed a large, bulging, pulsating mass, 7 cm. wide, just to the left of the upper sternum (fig. 3). There was a harsh systolic murmur over the tumor, but the heart itself was not enlarged and showed no evidence of valvular disease. Blood pressure in the right arm was 130 systolic and 86 diastolic and in the left 90/?. The patient also showed a well marked Horner's syndrome on the left side from pressure on the thoracic sympathetic fibers. There was no evidence of involvement of the central nervous system. Both the Hinton and Wassermann tests were strongly positive.

A roentgenogram of the patient's chest (fig. 4) showed the heart measurements to be within normal limits, but the supracardiac dulness was about twice the usual size. Lateral views showed a rounded mass in the region of the arch of the aorta, which showed true pulsation. The patient was observed in the ward for four days and suffered acutely and continuously from pain over the area described. This could be relieved only by one-fourth grain (0.016 Gm.) doses of morphine given at frequent intervals.

As no direct operative attack could be made on an aneurysm of this size and position, it was decided to do a procaine injection of the thoracic sympathetic fibers in order to determine whether it would be possible to relieve the pain by blocking these structures.

Oct. 22, 1930, paravertebral injection of procaine was done beneath the first and second ribs on the left side; 5 cc. of 2 per cent procaine epinephrine solution was injected against the vertebral bodies in the region of the vertebral foramina. This gave immediate relief from all pain and hyperesthesia in the painful area.

Much to our surprise, the pain failed to recur as the procaine was absorbed, so that at the end of a week the patient remained completely pain-free. He was discharged with the understanding that he was to have antisyphilitic treatment in the outpatient department and to reenter the hospital for alcohol injection if the pain returned. Following his discharge he reported complete relief for three weeks. Then for a period of two weeks the pain recurred. He was considering reentry for alcohol injection when the pain again disappeared spontaneously. He finally developed bronchopneumonia and died painlessly, Jan. 10, 1931, of a sudden hemorrhage following a coughing spell.

Prolonged relief of pain following simple procaine injection of the painful nerves has been reported on numerous occasions, notably by Mandl,[3] who uses this method as a routine for relief of angina pectoris. There have been several instances in this clinic of prolonged and severe visceral pain which have been completely relieved by procaine for long periods of time. Usually, however, the pain has recurred in from two to thirty-six hours, necessitating a second injection with alcohol.

CASE 3.—Eric N. S., aged 37, a Swedish carpenter, stated that he had always enjoyed excellent health. Seventeen years before, while he was working as a seaman, he noticed a "red pimple" on the penis. This had appeared about three weeks after his last exposure to venereal infection. He then noticed a swollen gland in the right groin. The penile lesion was treated several times by the ship's captain with local applications. The patient felt bad for about a month but does not remember skin lesions or other sequelae.

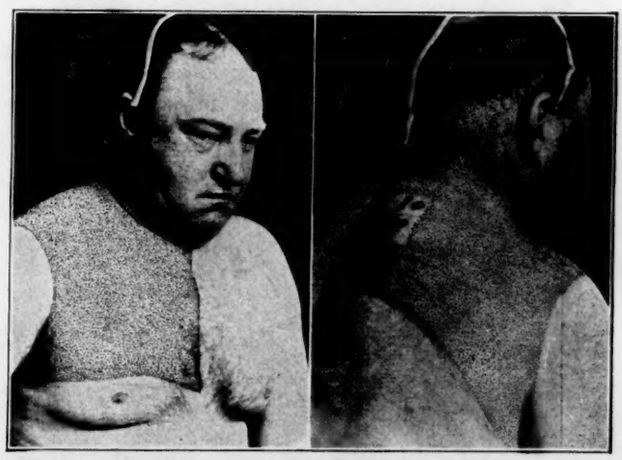

Fig. 2 (case 1).—Area of referred pain from aneurysm of ascending arch of aorta, and points of injection that gave relief.

In 1925 the patient came to the hospital complaining of cough, dyspnea on exertion, dysphagia and precordial pain of nine months' duration. These symptoms had appeared suddenly after a heavy blow on his left shoulder. Examination at this time showed only slight enlargement of the heart, but an increase in supracardiac dulness to 8.5 cm. Blood pressure could not be obtained in either arm, but in the popliteal space it was found to be 240 systolic and 170 diastolic. The Wassermann reaction was strongly positive. Roentgen examination revealed a supracardiac shadow 8 cm. in diameter, which

displaced the trachea slightly to the left but did not pulsate. It did, however, appear to be continuous with the heart. The patient had a series of antisyphilitic treatments in the outpatient department for the next five years.

During the period after his first admission the patient had frequently been bothered by pain over the upper precordium, which extended occasionally to the axilla and into the neck on the left side. It was dull but increased on exertion. The palpitation and dyspnea improved considerably on antisyphilitic measures. During the past year, until two weeks before admission, the pain left him almost completely. Six months before, following a severe cold and cough, he noticed the development of a lump in the suprasternal area. Two weeks before admission another severe cough and cold came on, and the pain in the chest reappeared with great severity. For the first time he noticed hyperesthesia over the anterior left upper part of the chest associated with a sharp, burning, drawing pain in this region. Five days before admission the tumor at the upper end of the sternum enlarged considerably and became very tender.

The patient was well developed and well nourished, with flushed cheeks, he was apprehensive and in considerable pain. The heart was greatly enlarged to the left, and the supracardiac dulness measured 9 cm. The heart sounds were of poor quality, they were regular, and there was a soft, blowing systolic murmur over the whole precordium, heard best at the apex. There was also a loud to-and-fro murmur over the tender swelling in the upper sternum (fig. 5). Blood pressure could not be obtained in either arm. The left arm could not be

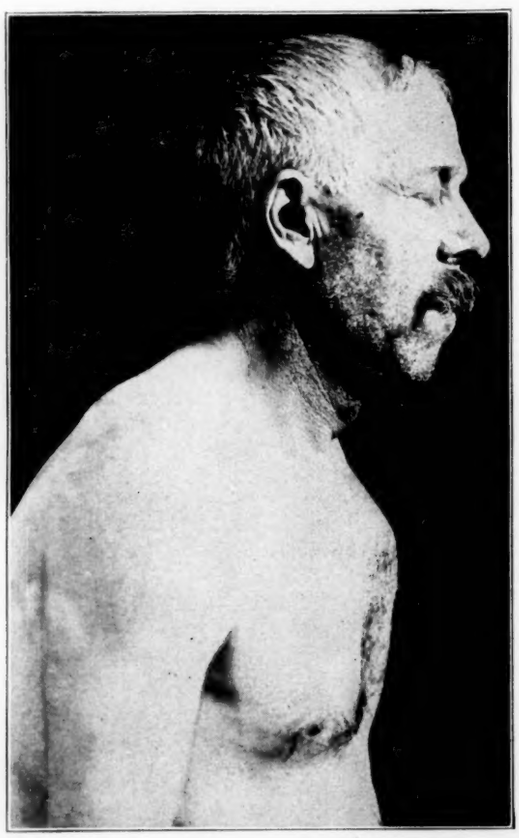

Fig. 3 (case 2).—Aneurysm of aortic arch eroding through the upper part of the sternum.

abducted on account of the severe pain in the left clavicle and the left anterior side of the chest. A definite tracheal tug was made out and a diastolic shock over the tumor mass. Both the Hinton and the Wassermann reaction of the blood were still strongly positive, but there was no evidence that the central nervous system was involved. By roentgen examination the mass in the upper mediastinum showed a slight but distinct increase in size and appeared to pulsate slightly (fig. 6).

Dec. 4, 1930, paravertebral injection of procaine was given, followed by 5 cc. of 95 per cent alcohol in the region of the first and second thoracic vertebral foramina on the left side. This gave immediate and complete relief of the patient's pain and hyperesthesia, which has lasted to date, a period of twelve months. The patient has reported back to the clinic from time to time and has shown a gradual diminution in the

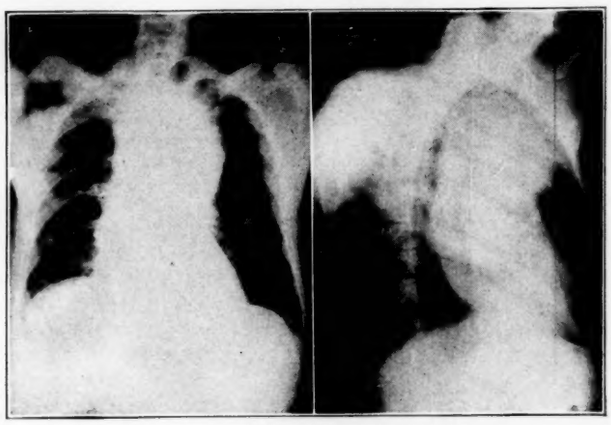

Fig. 4 (case 2).—Extent of aortic aneurysm.

size and pulsation of the substernal mass. Although he is still unable to work on account of dyspnea and easy fatigability, yet he has shown a marked improvement in his general condition and is extremely happy over the success of the injection treatment for the relief of his pain.

COMMENT

In the three cases reported, the relief of intense suffering was highly satisfactory. In the two patients injected paravertebrally with alcohol, no further pain was noted; in the third, in whom procaine alone was used, pain totally disappeared for three weeks, recurring only in minor transitory attacks, so that a further injection with alcohol was never considered necessary. Why injections of procaine alone should give more than an hour or two's relief from visceral pain cannot be adequately explained, but Mandl [3] has reported relief of angina pectoris lasting for weeks and even months. After a successful injection of alcohol, the result seems to be permanent. I have a patient with angina pectoris who has gone for nearly five years without an attack on the injected left side, although he continues to have minor right-sided attacks, which have naturally not been affected by the injection of the sympathetic nerves on the left. In the third case reported, the patient remains well and free from pain at the end of a year.

That an accurate injection of these structures, which lie at a depth of from 5 to 8 cm., requires considerable technical skill goes without saying. The accuracy of the injection in the first case was shown by the final autopsy. The experience in these three cases would make paravertebral injection in aneurysm appear rather easier than in angina pectoris, probably because only two rami instead of four or five need to be injected. Another encouraging feature in this limited group of cases is that the rather general complaint of hyperesthesia of the overlying intercostal nerves, which has been a distinct annoyance in most of the angina cases following alcohol block, has been notably absent.

To digress from the purely clinical side of this paper, a point of much theoretical interest is that the mechanism of relief of pain in these cases must lie in the blocking of afferent pain pathways in the sympathetic

system. Proponents of the theory that the sympathetic nervous system exerts primarily a motor influence on the viscera have frequently stated that blocking the sympathetic pathways in angina pectoris prevents the attacks by inhibiting vasospasm of the coronary arteries. No such possibility can be evoked here, where the pain of distention of the aneurysm and pressure on the surrounding viscera is of a constant, steady nature. Weiss and Davis [10] have shown that visceral pain can be relieved by infiltrating the skin segments to which that pain is referred. It might be felt that as the upper two intercostal nerves are anesthetized in this procedure, the cessation of the pain might be caused by blocking the somatic half of the viscerosensory reflex. This theory, however, is untenable, as the anesthesia of the intercostal nerves never lasts more than a few weeks.

CONCLUSION

I would like to emphasize that the paravertebral injection of alcohol is a poor substitute for sympathetic ganglionectomy in any patient who is a reasonably good operative risk, on account of the technical difficulty of injecting the alcohol with sufficient accuracy to be certain of destroying the ganglions or their communicant rami. However, in such cases as those reported, in which there are rapidly enlarging aneurysms, the dangers of cardiac decompensation, respiratory obstruction, or rupture of the aneurysm make a radical operation on the stellate and second dorsal ganglions quite out of the question. In these, however, paravertebral injection can be done with reasonable safety and a good chance of lasting relief of the chief complaint—pain. While actual prolongation of life is not to be expected from the relief of pain, it may be brought about indirectly by permitting the exhausted sufferer to rest and sleep in relative comfort.

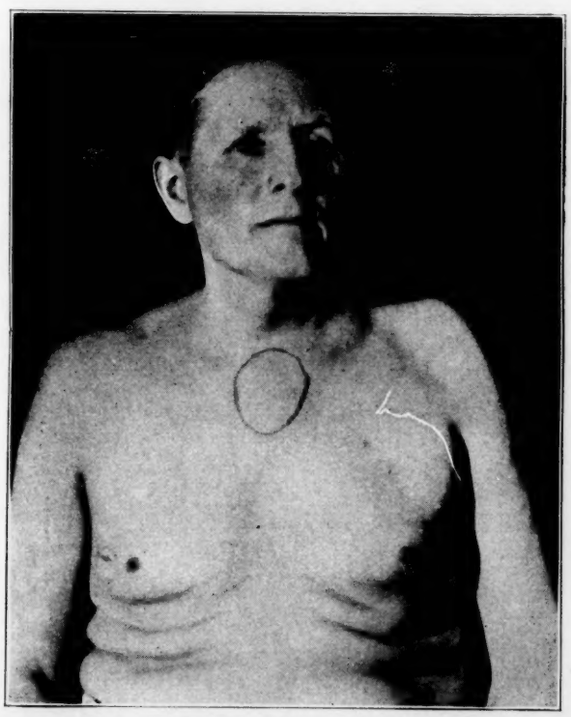

Fig. 5 (case 3).—Aneurysm which had eroded upper part of the sternum, marked by circle.

10. Weiss, Soma, and Davis, D.: The Significance of the Afferent Impulses from the Skin in the Mechanism of Visceral Pain, Am. J. M. Sc. **176**: 517 (Oct.) 1928.

SUMMARY

1. In three cases reported, successful relief of pain was obtained in advanced aneurysms of the aortic arch.

2. The intense suffering that may occur in this condition, as well as the cardiac pain of angina pectoris, can be relieved by paravertebral injections of procaine or alcohol.

3. Procaine injection is of diagnostic value in determining which communicant rami transmit the painful impulses to the spinal cord. It may give relief over prolonged periods.

4. Alcohol, when accurately injected, causes permanent destruction of the sympathetic rami.

5. Sympathetic ganglionectomy, although a surer method of interrupting cardio-aortic pain pathways, is too serious an operative procedure to use in patients with large thoracic aneurysms. Paravertebral block, although technically a difficult procedure, is well tolerated and should give satisfactory results in a large percentage of cases.

Fig. 6 (case 3).—Aneurysm of aortic arch.

SELECTIVE COLLAPSE OF LUNG WITH PHRENICOTOMY COMPARABLE TO THAT WITH PNEUMOTHORAX

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It is commonly appreciated that when a few hundred cubic centimeters of air is injected into the pleural space of persons with tuberculosis of one lung lobe, the slack given by the air to the elastic pull of the hemilung is frequently taken up more by the diseased than by the normal lobes, with the result that the air resides principally over the diseased lobe and collapses it selectively. The roentgenographic appearances in one of these cases are shown in figure 1. The exposure at *A* was made of the chest before induction of pneumothorax and demonstrates the presence of a tuberculous lesion lightly infiltrating the right upper lung field; that at *B* was made immediately after the last of a series of injections, which introduced 800 cc. of air and occupied ten days and shows marked collapse of the diseased portion of the lung without detectable deflation of the normal portion; and that at *C* was taken a few days later, after introduction of much more air, and demonstrates uniform and complete deflation of the hemilung. The phenomenon in reference is shown in the second roentgenogram and is termed selective collapse or selective pneumothorax.

Figure 2 is used to illustrate the principle of differential elasticity of the lung commonly believed to explain selective collapse after pneumothorax, so that certain comparisons can be made later. It shows three views of a rectangular frame which represents the walls

From the Department of Surgery, Peiping Union Medical College.

of a hemithorax. Two rubber bands are stretched the width of the frame, to represent the upper and lower pulmonary lobes, being fixed directly to the frame on one (the left) side as lobes are fixed to the mediastinum, and being connected indirectly to the frame on the other side with bracket and cord, the bracket representing the lateral surface of the lung and the cord the pull of the intrapleural suction. The bands are the same length when completely relaxed but the upper band has the greater thickness and elastic tension; which circumstances imitate those of the pulmonary lobes when the upper one is tuberculous. The bracket has pivoted bars at each end, which serve for attachment of the bands and represent the lateral surfaces of the two lobes. The cord runs from the center of the bracket to the center of the frame's side, so that its pull is evenly balanced like that of the intrapleural suction. In the view at *A* the bracket is completely drawn to the frame in imitation of the situation in figure 1 *A*. At *B* the cord is released a little, and the result is that the upper band is much shortened while the lower one is scarcely shortened at all. This may be compared to the condition in figure 1 *B*. Further release of the cord, as shown at *C*, relaxes the bands completely and brings them to equal lengths. This is similar to the condition in figure 1 *C*.

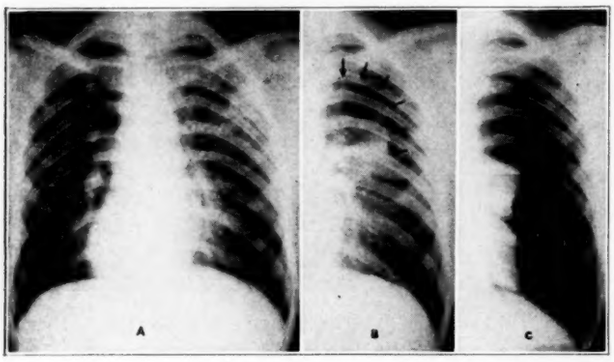

Fig. 1.—Appearance of lung in patient with tuberculosis involving the right upper lung field, in whom the diseased tissues collapsed selectively after pneumothorax: *A*, entire chest before pneumothorax; *B*, after injection of 800 cc. of air (arrows indicate selective collapse); *C*, after complete pneumothorax.

Several authors have called attention recently to the fact that after phrenicotomy for pulmonary tuberculosis the diseased part of the hemilung may be favorably affected regardless of its position; whereas it was the belief of those who first employed the treatment that it benefited only lesions situated in the lower lobes. Thus, O'Brien [1] found in a large series of cases that 46.6 per cent of tuberculous cavities in the upper lung field, 62.5 per cent of those in the middle field, and 80 per cent of those in the lower field were obliterated after phrenicotomy, and he commented as follows:

> It is possible that the smaller percentage of closures of cavities in the upper lung field was due to the fact that in this region the cavities, as a rule, are larger and have thicker walls than those found at the base. Cavities at the apex are often at the periphery of the lung with the walls of the cavity adherent to the wall of the chest, so that contraction of the elastic tissue of the lung has less tendency to cause their closure. The presence of adhesions over the whole lung surface is, of course, also a factor. It is my experience that similar lesions under favorable conditions will be equally affected by phrenicotomy whether they are located in the upper or lower lung fields.

R. C. Matson [2] found that

> the results of an induced hemidiaphragm paralysis are less dependent upon the site of the lesion than upon its type. This is explained by the fact that in certain types of tuberculosis, particularly in the proliferative varieties, the collapse capacity of the diseased lung tissue is greater than that of healthy lung tissue. Therefore, even though the lesion is in the upper lobe, the rising diaphragm, by reducing the volume of the hemithorax, permits the collapse capacity of the diseased lung tissue to exert itself, even without any collapse of healthy lung tissue.

To prove his statement this author presents roentgenograms of a case before and three years after phrenicotomy in which, at first, a very large cavity was present in the upper lobe and, at last, the cavity was absent and the upper lobe was densely fibrotic and extremely shrunken. The diaphragm was much higher in the second view, but the vertical diameter of the air-containing, normal part of the lung above was not reduced. Evidently the slack given to the hemilung by the rise of the diaphragm was entirely taken up by obliteration of the cavity and shrinkage of the diseased tissues. The inference was that the shrinkage occurred over a period of three years from proliferation and contraction of fibrous tissue taking place as the lesion healed.

In the two cases to be described, selective collapse appeared very shortly after phrenicotomy, as in the case with pneumothorax, without sufficient time to allow for proliferation and contraction of fibrous tissue.

CASE 1.—A man, aged 24, had had symptoms of pulmonary tuberculosis for two years. Roentgenographic examination showed that the lesion was scattered thinly over the upper and middle lung fields on the right, whereas the lower field presented no change except accentuated bronchial markings which did not appear tuberculous (fig. 3 *A*). A large cavity existed in the lower part of the middle field, close to the lower boundary of the lesion. The pulmonary environs were not distracted. The sputum contained tubercle bacilli. The right phrenic nerve was avulsed, and five days afterward the film reproduced in figure 3 *B* was taken. This showed the diaphragm and

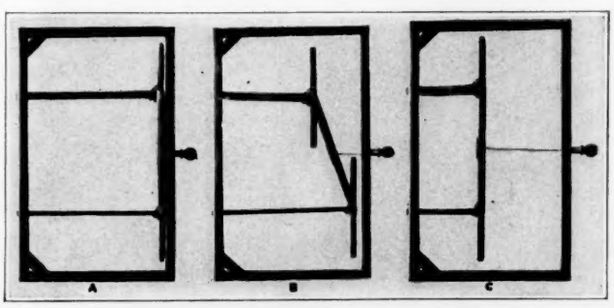

Fig. 2.—Model which demonstrates the principle of differential pulmonary elasticity responsible for selective collapse after pneumothorax.

cavity to be greatly elevated, the former only a little the more, so that the vertical diameter of the hemilung was shortened much more than proportionately at the expense of the diseased segment. The size of the cavity was not changed. Figure 3 *C* gives the appearances eighteen months later when the diaphragm was in about the same position but the cavity was missing and the lesion as a whole was inactive.

CASE 2.—A woman, aged 32, gave much the same history as the previous patient. Also, a large cavity was present in the

1. O'Brien, E. J.: Phrenic Nerve Operations in Pulmonary Tuberculosis, J. A. M. A. **95**: 650 (Aug. 30) 1930.

2. Matson, R. C.: Operative Collapse Therapy in the Treatment of Pulmonary Tuberculosis, West. J. Surg. **38**: 662 (Nov.), 743 (Dec.) 1930, **39**: 13 (Jan.) 1931.

lower part of the right middle lung field; but the parenchyma below it was infiltrated lightly with tuberculosis, while the lung above was nearly devoid of disease (fig. 4 *A*). Phrenicotomy was done on the right, and one week later the next roentgenogram (fig. 4 *B*) showed the diaphragm markedly elevated, with extremely little elevation and no appreciable collapse of the cavity. A film (fig. 4 *C*) eight months later indicated further rise of the diaphragm, closure of the cavity and fibrosis of the lesion.

Reference is made particularly to the selective collapse of the diseased parenchyma that occurred in both

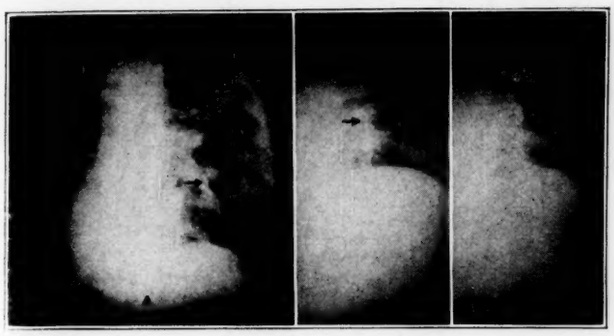

Fig. 3.—Appearance in patient with tuberculosis of the right upper and middle lung fields, in whom selective collapse occurred after phrenicotomy. *A*, entire chest, the arrow indicating a cavity at the lower boundary of the lesion; *B*, the right hemithorax five days after phrenicotomy; *C*, the same view eighteen months later.

cases immediately after the operation. The objection could be raised in case 2 that the upper lobes may have been adherent to the chest wall and therefore could not retract when the diaphragm rose and that this, rather than differential elasticity, might explain the situation. Adhesions could, indeed, have been responsible in that case, for there is no proof of their presence or absence; but they could not have brought about the result in the first case. The author has seen other examples of this selective collapse, less extensive but equally well defined.

A model has been constructed to illustrate the principle of differential elasticity which may have been concerned in the early selective collapse in these cases (fig. 5). It has a rectangular frame to represent the walls of a hemithorax. The short side below is movable and represents the diaphragm, while a rubber band, stretched from top to bottom, takes the place of the lung. The band is composed of two segments which are equal in length when relaxed but are unequal in thickness and elastic tension, the upper one being the tenser to represent a diseased upper lobe. The view at the left shows the model with the diaphragmatic side drawn to the bottom; the two series of vertical lines in the middle indicate the lengths of the two segments of the band found by measurement before, at a number of stages during, and after elevation of the diaphragmatic side; and the view at the right shows the model with the band completely relaxed. The relaxing process exhibits two distinct phases: first, one indicated at x with shortening chiefly of the thicker segment and, second, one at y with shortening chiefly of the other segment. Phase x appears to correspond to the phase of relaxation of the lung produced by phrenicotomy in figure 3 *A* to *B*. Although no illustration is given to show it, when the positions of the rubber segments are reversed in the frame to correspond with the positions of the normal and diseased segments of the lung in case 2, the band contracts in two phases as before. The first phase is again characterized by shortening of the thicker segment and suggests the manner of relaxation of the diseased segment of lung (fig. 4 *A* to *B*).

In proliferative pulmonary tuberculosis the scar tissue in the parenchyma tends to contract as healing progresses and, like cicatricial contraction in other regions of the body, the process requires months or years. Operations that relax the lung undoubtedly increase the contraction. Bronchial obstruction is a second cause for contraction in this disease, for when the bronchus of one or more lobes becomes obstructed, as by viscid exudate, blood clot, enlarged peribronchial lymph nodes, or bronchial cicatrix, or when the bronchus of one or more lobules within a lobe becomes so obstructed and collateral respiration is also shut off,[3] the corresponding segments of lung become atelectatic and shrink extensively. But these causes for shrinkage do not account for the selective collapse that took place in any of these cases soon after the relaxing operations, because the collapse was far too quick for the shrinkage of scar and because bronchial obstruction had not been produced. The collapse had the characteristics of elastic recoil rather than those of shrinkage of an inelastic substance.

Work just completed by Van Allen and Wu [4] demonstrates that parts of the lung infected with pneumococcus develop large increases of elastic tension as early as six hours after entrance of the organisms to the bronchi, which is many hours before blockage of the bronchioles and alveoli (consolidation); and also as late as many days after reestablishment of patency of the air passages and sacs. At these preconsolidative and postconsolidative stages of the disease, the lung shows thickening of the alveolar and lobular septums and pleural membranes from the presence of dilated vessels and interstitial inflammatory fluids and cells; and this seemed to us to be the cause for the increased resistance to inflation. Since in tuberculosis the pulmonary septums and membranes are thickened in much the same way from the earliest stages of the disease, whatever the type of lesion, it seems likely that the increased elastic tension in that disease is due somewhat

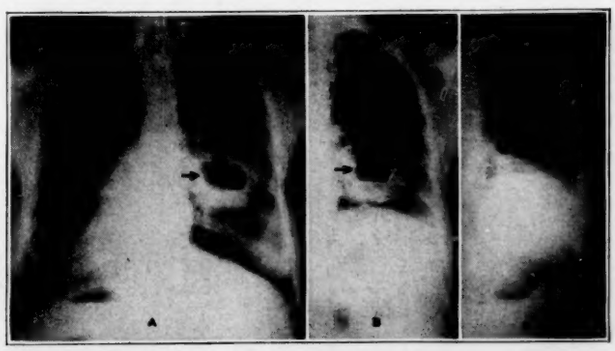

Fig. 4.—Appearance in patient with tuberculosis involving the right middle and lower lung fields, in whom selective collapse followed phrenicotomy: *A*, whole chest, the arrow marking a cavity at the upper boundary of the lesion; *B*, right hemithorax seven days after phrenicotomy; *C*, condition eight months later.

to that cause. A second factor is probably the formation and contraction of scar tissue beforehand in some parts of the diseased lobe with stretching of the elastic tissues in the rest of the lobe. The extent to which the first or second cause is responsible in a given case is probably

3. Van Allen, C. M., and Jung, T. S.: Postoperative Atelectasis and Collateral Respiration, J. Thoracic Surg. **1**: 3 (Oct.) 1931.
4. Van Allen, C. M., and Wu, C.: Increased Elastic Tension of the Lung in Experimental Pneumonia, to be published.

determined by the degree to which the exudative or proliferative variety of tuberculosis happens to predominate. With essentially exudative lesions the first cause probably acts almost alone; while with the proliferative lesions, especially the early ones, both causes are probably concerned, the second being perhaps the more important.

The type of selective collapse in pulmonary tuberculosis that develops rapidly after pneumothorax or phrenicotomy probably occurs also, although to less extent, without collapsing operations, judging from the appearances presented by certain cases in my experience. In one, for instance, there was a small, extremely early lesion of the left upper lobe indicated in the roentgenogram by a patch of "soft" beaded trunks about 2 cm. above the center of the interlobar fissure. The fissure was visible as a transverse line with a marked upward curve at the center. After the patient had had two months' rest, roentgenographic examination showed almost normal parenchyma and a straight interlobar line. It was evident that the tissues had collapsed partially when actively infected and had reexpanded during healing. Bronchial obstruction was certainly not responsible for the collapse, since the infected portion was air containing, and the collapse disappeared much too quickly for it to have been due to scarring. The most likely cause was increased elastic tension and resistance to inflation on account of interstitial septal

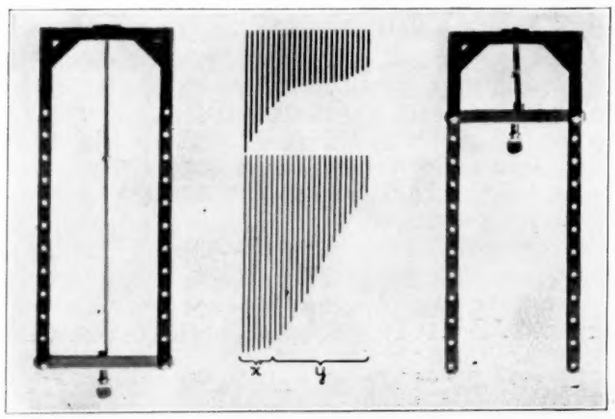

Fig. 5.—Model which demonstrates the principle of differential pulmonary elasticity probably responsible for selective collapse after phrenicotomy.

fluids and cells. This selective collapse is evidently an agent of rest for the inflamed parenchyma, as well as of compression.

Selective collapse is not seen in every case of tuberculosis treated by pneumothorax, because it is prevented by adhesions, or because the lung is relaxed too much, or because the inflammation is too widespread. So, too, and probably for the same reasons, the phenomenon is not seen regularly after therapeutic paralysis of the diaphragm. It is detectable even less frequently after phrenicotomy than after pneumothorax, likely because pulmonary landmarks are seldom available in the first case to delineate the boundaries of the normal and diseased tissues, whereas they are always furnished in the second by the pleural surfaces. Selective collapse after phrenicotomy as extensive and evident as that seen in the two patients described here is unusual in my experience, while usually healing of the lesion regardless of its location in relation to the diaphragm affords the only evidence of the selective effect.

SUMMARY

The occurrence of selective collapse of the lung in pulmonary tuberculosis after phrenicotomy has been referred to and illustrated with cases. It has been compared in principle to selective collapse after pneumothorax. For both operations, differentiation is made between the deflation of the diseased tissues which occurs immediately and is probably due to increased elastic tone of the lung, and that which occurs gradually and is due to formation and contraction of scar tissue. The increased elastic tension of the lung, in the first type, is believed to be due largely to thickening of the pulmonary septums and membranes from vascular congestion and interstitial deposit of inflammatory fluids and cells.

LIPODYSTROPHY

ATROPHY AND TUMEFACTION OF SUBCUTANEOUS TISSUE DUE TO INSULIN INJECTIONS

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AND
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Atrophy of the subcutaneous tissues producing depressed areas on the skin as a result of insulin injections was first reported in 1926 by Barborka.[1] He noted two instances of such atrophy and recommended massage of the tissue after insulin therapy and a variation of the site of injection. He found no evidence of inflammation and no muscular weakness or evidence of nerve injury. In the same year, Depisch[2] recorded five cases of atrophy due to insulin and stated that the onset might vary from a few months up to two years after the start of the treatment. He noted some impairment in sensations over the affected area. In 1927, Mentzer and DuBray[3] reported an instance of this condition. Sections of the area did not indicate any inflammatory changes. Davidson,[4] in the same year, observed atrophy in a woman four months after the beginning of insulin therapy.

In 1928, the following articles were published: Rabinovitch[5] observed atrophy in eight patients. He found no lipase in insulin. Chapman[6] reported the disappearance of atrophy two and one-half years after the site of the insulin injection had been changed. Lawrence[7] found lymphocytic infiltration with some plasma cells and eosinophils in injected nonatrophic areas. He felt that the method of preservation of the insulin or the sterilization of the needle were not at fault but that damage to the delicate protoplasmic envelop of the fat cells released fat globules, which in turn stimulated histiocytes, which assumed lipophagic activity. Such lipophagic cells were reported by Gilchrist and Ketron[8] in 1916 from another type of injec-

1. Barborka, C. J.: Fatty Atrophy from Injections of Insulin, J. A. M. A. **87:** 1646 (Nov. 13) 1926.
2. Depisch, F.: Local Lipodystrophy Following Repeated Injections of Insulin: Five Cases, Klin. Wchnschr. **5:** 1965 (Oct. 15) 1926.
3. Mentzer, S. H., and DuBray, E. S.: Fatty Atrophy from Injections of Insulin, California & West. Med. **26:** 212 (Feb.) 1927.
4. Davidson, R. A.: Absorption of Subcutaneous Fat Deposits at Site of Repeated Insulin Injections: Case, California & West. Med. **26:** 210 (Feb.) 1927.
5. Rabinovitch, I. M.: Atrophy of Subcutaneous Fat Following Injections, Canad. M. A. J. **18:** 560 (May) 1928.
6. Chapman, P. D. H.: Local Fat Atrophy Following Insulin Injections, Lancet **1:** 674 (March 31) 1928.
7. Lawrence, R. D.: Effect of Prolonged Use on Subcutaneous Tissues, Lancet **1:** 1328 (June 30) 1928.
8. Gilchrist, T. C., and Ketron, L. W.: A Unique Case of Atrophy of Fatty Layers of the Skin, Preceded by the Ingestion of the Fat by Large Phagocytic Cells, Bull. Johns Hopkins Hosp. **27:** 291 (Oct.) 1916.

tion. Carmichael and Graham [9] recorded three instances of atrophy and suggested that it might be due to lipase in the insulin. Joslin [10] recorded three cases of subcutaneous atrophy. One of the patients complained of pain in the depressed area.

In 1929, Fischer [11] studied twenty-four children who had received insulin for more than six months. Atrophy was present in eight patients and slight evi-

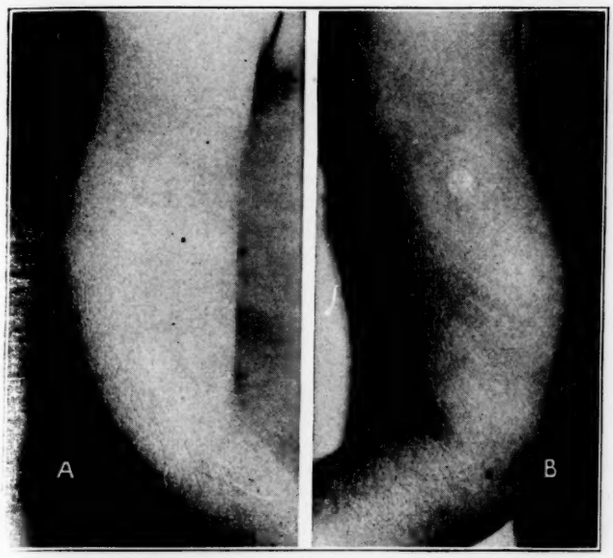

Fig. 1.—Subcutaneous tumefactions in a boy, aged 8 years, due to injections of insulin: *A*, right arm; *B*, left arm.

dences of this trouble were found in eight others. In the same year, McCormick and Moorhead [12] observed two instances of atrophy. In one woman it had appeared after six injections.

In 1930, Reed, Anderson and Mendel [13] found no lipodystrophy in the tissues of rats after injections of insulin or salt solution. Depisch [14] again discussed the subject and stated that about 10 per cent of all patients, especially women, who continue insulin up to two years develop atrophy as a result of traumatic and chemical effect from the insulin itself. Woodhouse,[15] in 1930, reported postmortem studies of an atrophic area in a patient. No evidence of inflammation was found. Nichols [16] recorded large areas of atrophy beyond the immediate site of infection in line of lymphatic drainage. In two years, regeneration of the fat had occurred. He noted that females and children were especially susceptible. Priesel and Wagner [17] suggested that tricresol might be responsible for the atrophy. Boller [18] reported eight instances of atrophy and stated that Falta had seen six cases in one year in his practice. Stransky [19] reported one instance of lipodystrophy and suggested the addition of procaine hydrochloride to the insulin to reduce the distress of the injection. In 1930, Eeg-Olofsson [20] noted atrophy in a woman ten months after beginning insulin therapy. Microscopically, fatty atrophy and small areas of round cell infiltration similar to that occurring after any hypodermic injection were found.

During the last nine years, since his first use of insulin, one of us, (A. H. R.) observed two instances of lipodystrophy. Recently we have carefully examined the tissues of fifty patients whose ages varied from 7 to 79, with an average age of 40.6 years, and who had taken insulin for an average of one year. Definite atrophy was observed in two additional cases. The absence of atrophic reaction in more of our patients may be due to the emphasis we have always laid on the importance of the variation in the site of injection. It is also interesting to report that definite fatty atrophy of subcutaneous tissue occurred in one patient who had received pollen therapy in the same area once a week for ten months. This corroborates the opinion of Lawrence that mechanical injury of the fatty cells may be the true cause of the atrophy.

SUBCUTANEOUS TUMEFACTION

Recently an increase in the subcutaneous tissue in the outer aspect of each arm has been observed in one of our patients, a lad of 8 years, who was first seen by us at the age of 16 months in precoma. Insulin has been given ever since and in spite of our warning to give it in varying areas the injections had alternately been given in the same areas of the arms. During the last year the swellings had appeared and had gradually increased so that when seen five months ago they were soft and nonpainful and semifluctuating. No changes in sensation were present. Since injections in these areas have been stopped, the swellings have diminished to about half their size. The insulin was being absorbed satisfactorily from the swollen areas, since no decrease in insulin has been possible since the change. In fact,

Fig. 2. — Subcutaneous tumefaction from injections of insulin in a woman, aged 50.

Fig. 3.—Atrophy of subcutaneous tissue due to insulin injections in a woman, aged 37.

the mother thinks that the swollen areas absorbed the insulin faster than do the tissues in the legs. The boy is well and vigorous, weighs 64 pounds (29 Kg.) and measures 50½ inches (128 cm.) in height, which is 1 inch below the normal for his age.

In the examination of the fifty patients already referred to in this paper, three other patients with

9. Carmichael, E. A., and Graham, George: Local Fat Atrophy Following Injections, Lancet **1**: 601 (March 24) 1928.
10. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1928.
11. Fischer, A. E.: Frequency of Atrophy of Subcutaneous Fat, Following Injections of Insulin, Am. J. Dis. Child. **38**: 715 (Oct.) 1929.
12. McCormick, V. O., and Moorhead, T. G.: Insulin Fat Atrophy, Irish J. M. Sc., November, 1929, p. 727.
13. Reed, Lucille L.; Anderson, W. E., and Mendel, L. B.: Lipodystrophy from Insulin Injections, J. A. M. A. **95**: 395 (Aug. 9) 1930.
14. Depisch, F.: Local Lipodystrophy Around Points of Injection, Wien. med. Wchnschr. **80**: 168 (Jan. 25) 1930.
15. Price, L. R. W.: Local Absorption of Fat Due to Injections of Insulin, Lancet **1**: 1015 (May 10) 1930.
16. Nichols, J. B.: Atrophy of Subcutaneous Fat Associated with Injections, Am. J. M. Sc. **180**: 90 (July) 1930.
17. Priesel, Richard, and Wagner, Richard: Lipodystrophy in Children Receiving Insulin Injections Probably Due to Tricresol Content of Insulin, Klin. Wchnschr. **9**: 1548 (Aug. 16) 1930.
18. Boller, Reinhold: Treatment of Lipodystrophy Due to Insulin Therapy, Klin. Wchnschr. **9**: 2433 (Dec. 27) 1930.
19. Stransky, Erwin: Lipodystrophy in and Around the Sites of Insulin Injections, Wien. med. Wchnschr. **80**: 133 (Jan. 18) 1930.
20. Eeg-Olofsson, R.: Local Changes in the Subcutaneous Tissue Following Injections of Insulin, Act med. Scandinav. **73**: 89-98, 1930.

tumefactions due to repeated injections of insulin were found. A half lemon sized swelling in the outer surface of both arms occurred in a girl, aged 19 years, who had taken 70 units of insulin daily for seven years. These swellings had appeared during the last six months. Another girl, aged 12 years, had a moderate swelling on the arm, which disappeared in two months after the site of injection was changed. She has taken 32 units of insulin for five years and noticed the swelling one year ago. The other tumefaction occurred in a woman, aged 50, on the outer aspect of the right thigh. She had used this area for six months and had taken 16 units of insulin for one year. All these swellings were soft, nonpainful and noninflammatory.

We have found one other record of such tumefaction resulting from insulin therapy. Eeg-Olofsson noted it in a 16 year old girl who had taken 12 units twice daily in the outer surfaces of the thighs for one and one-half years. After this, increasing swellings occurred. "Two symmetrical tumors, about the size of fists," were present. They were nonpainful, soft and pseudofluctuating. The skin was firmly attached but the swellings were movable over the underlying muscles. Section of the tumor showed a chronic inflammatory reaction consisting of round cell infiltration, increased connective tissue and hemosiderosis. No definite increase in fatty tissue was noted. Strong fibrous strands extended from the skin into the subcutaneous fat. In one year after cessation of injections in the swollen areas, the tumefactions had practically disappeared.

242 Moss Avenue.

THE TREATMENT OF OBSTINATE CHOREA WITH NIRVANOL

WITH NOTES ON ITS MODE OF ACTION

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AND
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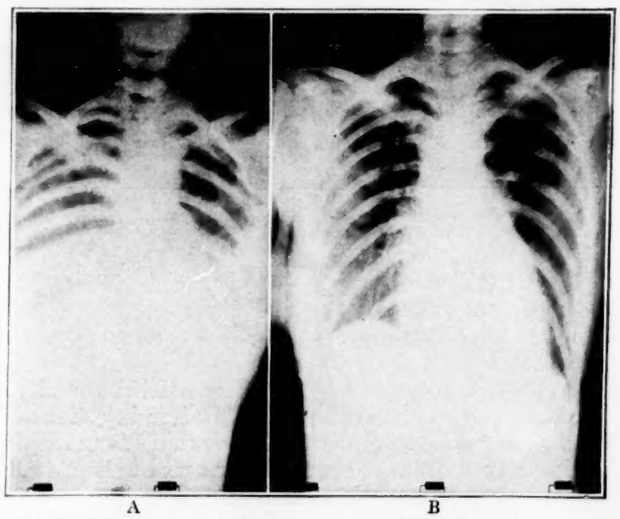
During the last fifteen years the capacity of nirvanol to produce a syndrome known as "nirvanol sickness" has been widely utilized in German clinics in the treatment of violent choreas.[1] Nirvanol is phenyl-ethyl-hydantoin, an hypnotic resembling phenobarbital in its pharmacologic action, but with a five instead of a six membered ring nucleus. "Nirvanol sickness" consists of fever, rash and eosinophilia, coming on sharply in a high percentage of persons treated, usually from six to twelve days after the first administration of the drug. It has been generally observed that following the appearance of this syndrome the course of the disease is shortened.

Recently similar reports have come from England.[2] Poynton and Schlesinger[3] have even observed the disappearance of persistent rheumatic nodules, accompanied by a lowering of temperature and quieting of the pulse rate, in four patients with "subacute rheumatism" who were given the usual course of nirvanol treatment. Three patients in the same series were not improved.

Some authors[4] consider "nirvanol sickness" to be caused by a specific idiosyncratic reaction to the drug; others[5] believe it due to a cumulative toxic phenomenon. Instances of heavy overdosage without harmful effect are on record;[6] on the other hand, several deaths, possibly but not certainly due to the drug, have been reported.[7]

This investigation was begun with the hope of obtaining information as to the value of the use of nirvanol in obstinate chorea and concerning the mechanism of its action. Two children and one young adult with persistent chorea were selected for the treatment. They had not been benefited by other usual forms of therapy, as described hereafter. Each of these patients was given approximately 0.0063 Gm. of nirvanol per pound a day in hot tea. This was estimated to be an average dose from Lesigang's series of 106 cases, the largest found in the literature. Owing to serious complications following the administration of nirvanol in one patient, the investigation was not followed further than an examination of the first series of three cases. Abbreviated case histories follow.



A B

Fig. 1.—Portable x-ray chest plates, showing changes occurring during "nirvanol sickness" and after process had cleared.

REPORT OF CASES

CASE 1.—M. F., a girl, aged 12 years, was well until May, 1928, when she had definite chorea for the first time, lasting two months. In January, 1930, she became nervous, soon followed by a recurrence of chorea. There was marked athetosis, speech difficulties and temperamental changes. She was hospitalized from February 24 to March 7, with definite improvement in the chorea. On one occasion slight, transitory polyarthritis appeared. She was admitted to the House of the Good Samaritan, March 7, with definite but mild chorea. There

From the Medical Clinic of the House of the Good Samaritan and the Department of Bacteriology and Immunology, Harvard University Medical School.

1. Husler, J.: Nirvanol bei Chorea minor, Ztschr. f. Kinderh. **38:** 408-411, 1924. Hefter, Elizabet: Nirvanolbehandlung bei Chorea minor, Ztschr. f. Kinderh. **38:** 403-407, 1924. Gottlieb, Adalbert: Ueber Nirvanolbehandlung der kindlichen Chorea minor, Monatschr. f. Kinderh. **43:** 433-438, 1929.

2. Poynton, F. J., and Schlesinger, Bernard: Treatment of Chorea by Nirvanol, Lancet **2:** 267-270 (Aug. 10) 1929. East, C. F. T., and Cullinan, E. R.: Nirvanol in the Treatment of Chorea, Lancet **2:** 190-191 (July 26) 1930.

3. Poynton, F. J., and Schlesinger, Bernard: Recent Advances in Rheumatism, Philadelphia, P. Blakiston's Son & Co., 1931.

4. Stettner, E.: Ueber die Nirvanolkrankheit: Beitrag zur pharmakologischen Wirkung des Nirvanols, hämatologische Studie: Vorlaufige Mitteilung, Ztschr. f. Kinderh. **45:** 445-461, 1928. de Rudder, Bernhardt: Nirvanol Sickness as Anaphylactic Reaction of Serum Sickness Type, Klin. Wchnschr. **5:** 1522-1523 (Aug. 13) 1926.

5. Lesigang, Walter: Die Nirvanolkrankheit, Monatschr. f. Kinderh. **40:** 289-302, 1928. Matzdorff, Kurt: Zur Nirvanolbehandlung der Chorea, Deutsche med. Wchnschr. **52:** 528-529 (March 26) 1926. Leichtentritt, Lengsfeld and Silberberg: Klinisches und Experimentelles zur Nirvanoltherapie bei der Chorea minor im Kindesalter, Jahrb. f. Kinderh. **122:** 12-45, 1928. Feer, E.: Zur Lymphatischen Reaktion beim Kinde, Monatschr. f. Kinderh. **42:** 157-169, 1929.

6. Majerus, K.: Erfahrungen über Nirvanol, Deutsche Ztschr. f. Nervenh. **63:** 312-325 (Feb. 21) 1919.

7. Jacob, Charlotte: Ueber Nirvanolvergiftung, Deutsche med. Wchnschr. **45:** 1331-1333 (Nov. 27) 1919.

was no demonstrable evidence of heart disease, and she was well developed and nourished, weighing 61 pounds (27.7 Kg.).

From March 8 through April 27, 15 minims (0.9 cc.) of tincture of stramonium three times a day was given without any change in the chorea. The patient weighed 63¾ pounds (28.9 Kg.) on the latter date.

On April 28, 29 and 30 she received 0.4 Gm. of nirvanol daily. She was awake during the day but slept heavily at night. The drug had no effect on the chorea.

May 1, 2, 3 and 4, she received 0.2 Gm. of nirvanol daily. The chorea, if anything, was more active.

May 5, she developed a scarlatinal rash over the forearms, body and legs. Nirvanol was not given. There was no fever. The chorea was slightly more active.

May 6, the patient received 0.2 Gm. of nirvanol. The rash was fading. There was no fever. The chorea became slightly less active.

The rash faded within several days. May 10, there was no temperature reaction; the weight was 63½ pounds (28.8 Kg.). Figure 2 shows blood changes occurring as a result of nirvanol treatment.

June 5, 1931, the patient was still hospitalized for mildly active chorea, which was not demonstrably affected by the nirvanol therapy. There has been a gradual increase in weight to 90½ pounds (41 Kg.). There is no clinically demonstrable heart disease. Two subsequent courses of stramonium have not affected the chorea.

CASE 2.—S. L., a girl, aged 9 years, was well until March, 1929, when two weeks after complaining of unsteadiness in walking she developed violent chorea and could neither stand nor speak. She was hospitalized from April 15 to June 1, and from June 1 until July 24 she was in a foster home. On admission to the House of the Good Samaritan, July 24, there were mild to moderate choreiform movements with a definite speech defect. There had been a gradual improvement in the chorea from the time of first hospitalization, with a loss of 15 pounds (6.8 Kg.) in the last four months. No demonstrable heart disease was found. During the first two months at the House of the Good Samaritan there were frequent rises in temperature to between 100 and 101 F. (rectal). The white blood count was consistently above 10,000.

From September 6 to October 1, 8 minims (0.5 cc.) of tincture of stramonium was given four times a day. It had no effect on the chorea.

From November 24 to December 17, the dosage was repeated. It had no effect on the choreiform movements but the speech defect improved slightly. There was no longer any fever and the white blood count remained consistently below 10,000.

From June 14, 1929, to April 27, 1930, 15 minims (0.9 cc.) of stramonium was given three times a day. It had no effect on the chorea, which continued definite, though mild. The weight was 68 pounds (31 Kg.).

April 28, 29 and 30, the patient received 0.38 Gm. of nirvanol daily. She slept heavily but was not drowsy during the day. There was no change in the chorea.

From May 1 to 6, she received 0.2 Gm. of nirvanol daily. The chorea was possibly a little more active. The temperature was 101 F. (rectal) the afternoon of May 6.

May 7, a definite maculopapular rash appeared on the arms, face, legs and buttocks in the form of pink areolas with light colored centers, the sizes varying from 1 or 2 mm. to 10 mm. in diameter. The rash was more noticeable in the pressure areas. There was no fever: no change took place in the chorea.

May 8, more areas of rash appeared but the majority were fading. There was no fever.

May 16, there was no further fever. The rash disappeared completely in about four days. The chorea remained unchanged. Figure 2 shows blood changes occurring as a result of nirvanol treatment.

May 15, 1931, the patient was discharged from the House of the Good Samaritan to the Contagious Hospital because of measles. During the past year there has been no change in the mildly active chorea. The weight has increased to 74 pounds (33.6 Kg.). There is no evidence of heart disease.

CASE 3.—F. L., a girl, aged 17 years, was well until January, 1927, when she had rheumatic fever. Three months later, heart disease was diagnosed for the first time by the school physician. In May, 1929, there was a recurrence of rheumatic fever with migrating polyarthritis. The patient was hospitalized for six weeks. July 1, polyarthritis returned and there was also stabbing precordial pain. She was in bed for three weeks prior to admission to the House of the Good Samaritan, July 23. She lost 16 pounds (7.3 Kg.) in three or four months. On admission the patient was rather pale, tall and poorly nourished. There were occasional mild choreiform movements of the hands. Her weight was 94¾ pounds (42.9 Kg.). The temperature occasionally rose to 100.5 F. (mouth) during the first month. Definite swelling and tenderness developed in the right metacarpophalangeal joint just after admission. There was slight cardiac enlargement and apical systolic and diastolic murmurs of mitral disease. The chorea became considerably worse several days after admission; the medication and course of the chorea may be summarized as follows:

From July 27 to August 2, ½ grain (0.03 Gm.) of phenobarbital was given three times a day.

From August 3 to August 10, 1 grain (0.06 Gm.) of phenobarbital was given three times a day. It had no effect on the chorea.

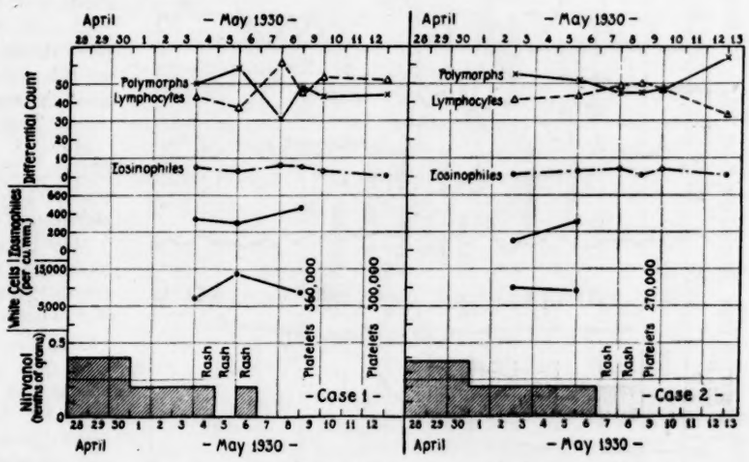


Fig. 2 (cases 1 and 2).—Blood changes as a result of nirvanol therapy.

From August 6 to August 21, 55 grains (3.5 Gm.) of acetylsalicylic acid was given daily because of a painful, swollen wrist and elbow.

August 8, 1/100 grain (0.6 mg.) of scopolamine was given subcutaneously. The chorea became violent. The patient was isolated.

From August 9 to August 21, 1 drachm (4 cc.) of paraldehyde was given four times a day. The chorea continued to be violent. There was no effect from the paraldehyde. Warm baths (not continuously) were ineffective.

From August 22 to September 1, 8 minims (0.5 cc.) of tincture of stramonium was given four times a day.

From September 1 to September 21, 10 minims (0.6 cc.) of tincture of stramonium was given four times a day.

Two or three days after the stramonium medication was begun the choreiform movements became less violent.

From November 1 to November 25, 8 minims of tincture of stramonium was again given four times a day.

There was a gradual subsidence of chorea to moderate activity, and the patient returned to the ward, Jan. 12, 1930.

From January 12 to March 7, 15 minims of tincture of stramonium was given three times a day. There was a gradual subsidence of chorea to mild activity. There still were definite purposeless movements. A small spontaneous nosebleed occurred, March 7. The patient was allowed out of bed, up to two hours daily, from March 24 to April 11, but the chorea became moderately active and she had to be returned to bed.

From March 6 to April 27, 15 minims of tincture of stramonium was given three times a day. The chorea became moderately active. The patient's weight, April 27, was 93 pounds (42.2 Kg.).

April 28, 29 and 30, she received 0.55 Gm. of nirvanol daily. She became very drowsy but it had no real effect on the choreiform movements.

May 1 and 2, she received 0.3 Gm. of nirvanol daily. There was a severe nosebleed, May 2. The chorea became slightly more active, but the patient was stuporous most of the time. The temperature rose to 102 F. (rectal).

May 3, a very fine macular pink rash appeared on the dorsum of the feet and ankles. She continued to be drowsy. The temperature rose to 103 F. (rectal). No platelets were found in the blood smear. The chorea became somewhat more active.

May 4, an extensive scarlatiniform rash appeared over the entire body. The temperature rose to 100 F. (rectal). The chorea remained unchanged.

May 5, the rash was present but fading. The patient was still drowsy. The chorea became less active. The temperature

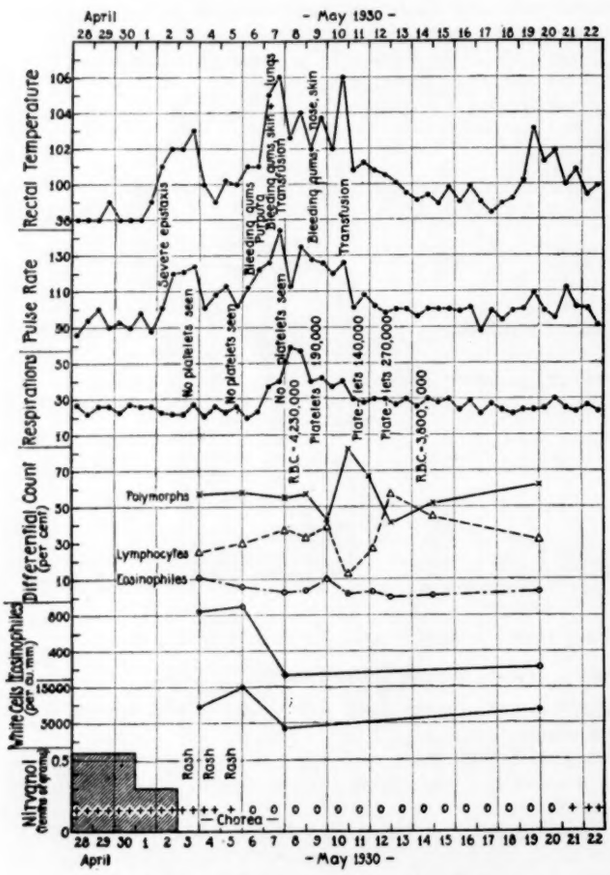


Fig. 3 (case 3).—Severe reaction to nirvanol therapy.

rose to 100.2 F. (rectal). No platelets were found in the blood smear.

May 6, a mild but persistent bleeding began from the gums. Following venipuncture numerous and extensive hemorrhagic areas appeared below the tourniquet. She was bleeding into the skin and subcutaneous tissues. The patient looked ill. There was no chorea. She was stuporous. The temperature rose to 101 F. (rectal).

May 7, at 6 a. m. the patient suddenly became weak and cyanotic. She had a dry, irritating cough, and respirations were up to 40. The temperature was 105 F. (rectal), pulse 144. The bleeding from the gums continued. Numerous extensive, coarse, moist râles were heard throughout both lungs. There was an increase in the purpuric areas. Petechiae appeared over the arms, trunk and legs. No platelets were seen in the blood smear. Bleeding time was sixty minutes. Direct transfusion of 400 cc. of blood was done. The temperature rose to 106 F. (rectal) after transfusion. Rapid respirations and mild cyanosis continued. There was an irritating, nonproductive cough. There was no chorea. The patient was drowsy but alert when awakened. Her condition was critical.

May 8, she was more awake and alert. There was no fresh bleeding; the cough continued; cyanosis was less. There were numerous râles throughout the lungs as before. The temperature rose to 104 F. (rectal). No platelets were seen in the blood smear. Reticulocytes were 28 per cent; red blood cells, 4,230,000. The benzidine test on the stool was frankly positive. Portable x-ray films showed a few small, mottled areas in the first interspace on the left, and entire right chest dull, with several rounded areas of increased density within the lung fields. These were thought to be hemorrhagic areas occurring probably at the time of the collapse of the day before.

May 9, the patient was better most of the day with respirations down to 30 and the lungs much clearer. She was brighter. There was occasional bleeding from the gums. There was mild nosebleed and several small, fresh showers of petechiae. Platelets numbered 190,000. Bleeding time was six minutes; coagulation time, six minutes. About 10 p. m. she began to bleed persistently again from the gums and nose.

May 10, bleeding was profuse until 4 a. m., and chiefly from the nose, pharynx, palate and gums. One-eighth grain (8 mg.) of morphine, subcutaneously, resulted in some rest. Respirations were 30. The temperature rose to 106 F. (rectal). Direct transfusion of 450 cc. of blood at 11:30 a. m. had no reaction. Roentgen examination showed a slight amount of fluid in both chests and changes suggesting general edema of the lung.

May 11, there was no further bleeding. The patient was more comfortable, and awake most of time. The temperature rose to 101 F. (rectal). The fluid intake and output remained good throughout. The benzidine test was still positive on the stool. There was no further chorea.

May 12, there was no further bleeding. Platelets were 270,000. Bleeding time was three minutes. May 14, she was considerably better. Red blood cells numbered 3,900,000; platelets, 270,000; bleeding time was four minutes.

May 20, after a week of normal temperature without further bleeding, the temperature the night before rose to 104 F. (rectal), and this night 102 (rectal). Respirations were under 30. The cervical glands were considerably enlarged.

May 22, roentgen examination showed the lungs practically clear, the peculiar process having disappeared (fig. 1). Mild chorea had returned.

June 1, the chorea had returned to a moderately active degree, as active as prior to the nirvanol therapy. The weight now was 85 pounds (38.6 Kg.), an 8 pound (3.6 Kg.) loss. There were rare, slight nosebleeds. (In figure 3 one may find the diagrammatic representation of the important events occurring as the result of the nirvanol therapy. Blood changes and temperature charts are especially interesting.)

June 5, 1931: The patient has been hospitalized continuously for mild to moderately active chorea, which has varied but little since the nirvanol therapy. The weight is 95 pounds (43 Kg.). On two occasions she has been allowed up but returned to bed because of increased chorea. There have been nosebleeds and on one occasion erythema multiforme. On examination there is moderate cardiac enlargement and evidence of mitral and aortic disease. The general condition is good.

CLINICAL COMMENT

Histories of three obstinate cases of chorea are given, with emphasis on their response to nirvanol therapy. In each of the three cases, "nirvanol sickness" was produced. The dosage was halved after three days and discontinued on the first appearance of rash. A definite rash occurred in each case as described in the case reports; on the sixth day in case 3, and on the eighth and ninth days respectively in cases 1 and 2. Case 1 at no time showed a temperature reaction, and in case 2 there was a single rise to 101 F. (rectal), sixteen hours prior to the appearance of the rash. Definite eosinophilia occurred in all cases, with an inversion of the neutrophilic and lymphocytic ratios, which is shown in figure 2. There was a definite increase in the total eosinophils, as shown in the same chart. The charts are strikingly similar to those presented by Poynton and Schlesinger. Case 3 failed to show the usual variation in neutrophilic

and lymphocytic elements until quite late, probably because of the complication of hemorrhage.

The most interesting phase of this report is concerned with the unusual reaction of case 3 to nirvanol therapy. A definite rash appeared on the sixth day, preceded by a temperature rise to 102 F. (rectal). On the ninth day after therapy was begun, bleeding occurred, first from the gums, then into the skin and subcutaneously. Blood platelets disappeared from the smear. There was a conspicuous prolongation of bleeding time with coagulation time unchanged. A sudden pulmonary episode occurred on the ninth day, possibly best explained as bleeding into the lung tissue (fig. 1). Each of two transfusions was followed by definite improvement. The blood picture resembled bone marrow suppression, as produced with nirvanol in rabbit studies by Leichtentritt and Lengsfeld,[5] and that seen in human beings, in benzene and arsphenamine poisoning. In addition, there was a secondary reaction, three weeks after therapy was begun, consisting in a rise in fever of two days' duration. The first reaction with its unusual pulmonary complication was nearly a fatal issue and shows clearly that the drug is one not to be used indiscriminately. Pilz [8] reported a somewhat similar case in 1927. The resemblance of these symptoms to the lung picture in barbital (veronal) poisoning (Willcox [9]) suggests a common toxic mechanism.

In each case the nirvanol caused sound sleeping, and in case 3 drowsiness. If anything, the chorea was slightly increased near the onset of "nirvanol sickness." In case 3 it completely disappeared for about two weeks following the reaction. All three patients have maintained their chorea unaltered, and one year following the use of the drug they continue to show mild choreiform movements.

COMMENT ON METHOD OF ACTION OF NIRVANOL

The very high incidence of skin rashes following the administration of nirvanol suggests the operation of a specific idiosyncrasy. Nirvanol produces an irritant reaction in the normal human skin, which makes any estimation of specific skin hypersensitiveness extremely difficult and necessitates careful controls. Two related drugs, phenobarbital and acetyl-nirvanol, which resemble nirvanol in their action in the normal human skin, were used for comparison. In the course of a number of intradermal tests on each patient, done with varying dilutions of the materials, before, during and subsequent to the appearance of their skin rashes, no evidence was obtained of a specific idiosyncratic reaction to nirvanol, either immediate or delayed.

In a recent paper Biberstein [10] asserted that he transferred atopic reagins to mercury and other chemicals from idiosyncratic (skin-reactive) patients by means of the Prausnitz-Küstner technic. Transfers by this technic from our three patients during and subsequent to the appearance of their skin rashes were negative. Since nirvanol does not cause a nonspecific contraction of the guinea-pig uterus, 6 cc. of blood serum taken from patient 3, May 14, was injected into a female guinea-pig for the purpose of testing for passive sensitization by the Dale uterus technic. On the next day the uterus did not react to nirvanol in the Dale apparatus.

Three guinea-pigs and three rabbits were given a course of nirvanol in doses corresponding by weight to those used in human therapy. None of these animals became skin-sensitive to nirvanol either during or after the injections, nor did any animal exhibit an abnormal rise or fall in temperature. After an incubation period of nineteen days following the last injection, the guinea-pigs were injected intraperitoneally with 30 mg. of the drug. No anaphylactic symptoms were observed. Since Leichtentritt and Lengsfeld [5] observed a deleterious effect on the bone marrow of rabbits injected with large doses of nirvanol, such evidence as is available from animal experiments favors a toxic explanation of the drug's action. In view of the difficulty with which the barbital series is excreted, and the resemblance of symptoms of severe "nirvanol sickness" to those seen in barbital poisoning,[9] it would seem to be advisable for practical purposes to consider that the doses being used at present in the treatment of chorea produce toxic symptoms which may lead to dangerous complications.

SUMMARY

1. Treatment with a course of nirvanol produced no permanent benefit in three obstinate cases of chorea.

2. One of the patients suffered a dangerous reaction to the drug. The details are reported.

3. Tests for the presence of a specific hypersensitiveness to nirvanol were consistently negative.

25 Binney Street—12 Chestnut Street.

8. Pilz, Clara: Auffallende Lungenerscheinungen bei Nirvanolintoxikation, Arch. f. Kinderh. **82**: 210-212, 1927.
9. Willcox, W. H.: Veronal Poisoning, Lancet **2**: 1178-1181 (Oct. 25) 1913.
10. Biberstein, Hans: Beiträge zur passiven Uebertragung der Ueberempfindlichkeit gegen chemisch bekannte Stoffe, Ztschr. f. Immuntätsforsch. u. exper. Therap. **48**: 297-368 (May 10) 1926.

Clinical Notes, Suggestions and New Instruments

TOXIC CIRRHOSIS OF THE LIVER DUE TO CINCHOPHEN COMPOUNDS: REPORT OF THREE FATAL CASES

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Since the introduction of cinchophen (phenyl-quinolinecarboxylic acid) in 1908 by Nicolaier and Dohrn,[1] its use has become widespread as an analgesic, particularly in arthritis. The fact that it may be purchased without a physician's prescription and is usually the chief constituent of many so-called rheumatism cures has added to its increasing use.

That the drug or its preparations may cause toxic symptoms was observed by von Muller,[2] Herrick [3] and Phillips.[4] In 1922, Schroeder [5] first drew attention to the toxic properties of the drug variously known as phenylcinchoninic acid, cinchophen, quinophan, atophan, agotan and phenoquin. He reported seventeen cases, chiefly of mild poisoning, consisting of headache, gastro-intestinal disturbances, and transient jaundice. Following Langdon-Brown's [6] communication in 1926, a dozen fatalities were reported by Evans,[7] Glover,[8] Willcox [9] and Wells.[10]

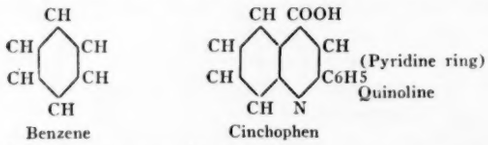
In 1925, Cabot [11] reported the first death, from acute yellow atrophy of the liver, of a patient who had taken "Weldona" tablets. Rabinowitz,[12] in 1930, collected forty-one cases in the literature and added nine additional cases. There were twenty-five deaths in this series of cases with twenty autopsies which

From the Medical Service, St. Elizabeth Hospital.

1. Nicolaier, Arthur, and Dohrn, Max: Deutsches Arch. f. klin. Med. **93**: 331, 1908.
2. von Muller, A.: Abstr. München. med. Wchnschr. **60**: 445, 1913.
3. Herrick, W. W.: A Scarlatiniform Rash from Atophan, J. A. M. A. **61**: 1376 (Oct. 11) 1913.
4. Phillips, John: Skin Rashes Following the Administration of Atophan, J. A. M. A. **61**: 1040 (Sept. 27) 1913.
5. Schroeder, K.: Ugesk. f. Læger **84**: 1141 (Sept. 7) 1922.
6. Langdon-Brown, W.: Brit. M. J. **2**: 37 (July 3) 1926.
7. Evans, Geoffrey: Brit. M. J. **2**: 93 (July 10) 1926.
8. Glover, L. S.: Brit. M. J. **2**: 136 (July 17) 1926.
9. Willcox, W. H.: Brit. M. J. **2**: 273 (Aug. 17) 1926.
10. Wells, C. L.: Brit. M. J. **2**: 759 (Oct. 23) 1926.
11. Cabot, R. C.: Boston M. & S. J. **192**: 1122 (June 4) 1925.
12. Rabinowitz, M. A.: Atrophy of the Liver Due to Cinchophen Preparations, J. A. M. A. **95**: 1228 (Oct. 25) 1930.

confirmed the diagnosis of acute yellow atrophy. Parsons and Harding,[13] in 1931, reported four fatal cases and classified the symptoms roughly into four groups: (1) cutaneous manifestations, such as pruritus, angioneurotic edema, urticaria, and macular and papular eruptions, exemplified by Phillips[4] in 1913; (2) anaphylactoid reactions characterized by neurocirculatory disturbances associated with rapid pulse and lowered blood pressure following the ingestion of a single dose of cinchophen, as mentioned by Scully[14] in 1924; (3) gastro-intestinal disturbances including simple aphthous ulcers in the mouth, pyrosis, nausea, vomiting, and diarrhea, reported by Schroeder[5] in 1922, and (4) liver involvement as indicated by the appearance of jaundice, first noted by Worster-Drought[15] in 1923. Recently Beaver and Robertson[16] reviewed five fatal cases at the Mayo Clinic and suggested a specific pathology for cinchophen poisoning of the liver, which "is essentially dissimilar to the ordinary Laënnac or portal variety."

Chemically, cinchophen is 2-phenyl-quinoline-4-carboxylic acid.



Rotter[17] states that it is excreted in the urine as 2-ortho-hydroxyl-phenyl-quinoline-4-carboxylic acid, an oxidation product. According to Willcox[9] the toxic action of the drug is due to the quinoline nucleus, consisting of the benzene and the pyridine rings, which yield the toxic ring of free benzene. Willcox says: "It is well known that jaundice occurs after the administration of the arsenobenzene compounds of arsenic, and the occurrence of jaundice is no doubt due to the combination of the arsenic with a benzene nucleus." The quinoline nucleus resembles that of benzene in that its presence may be associated with toxic action on the liver.

REPORT OF CASES

CASE 1.—G. B., a man, aged 26, entered St. Elizabeth Hospital, March 8, 1930, in delirium. Three weeks before entrance the father of the patient noticed jaundice of the sclerae and called the son's attention to it. During the next week the jaundice deepened, nausea and vomiting ensued, and he became lethargic. The urine was dark, and, during the three days before admission to the hospital, delirium was present. From the father of the patient it was learned that his son had been taking eight "Atophan" tablets daily for the relief of "rheumatism," which had followed an attack of tonsillitis three months before. No history of indigestion could be obtained.

On physical examination the patient presented a picture of marked icterus and was in mumbling delirium. The temperature was 98.0 F., pulse 96 and respiration 24. The blood pressure was 110 systolic and 84 diastolic. The heart was normal. The bases of both lungs were dull and the breath sounds absent. The area of liver dulness was markedly decreased. The superficial reflexes were present. Edema of the ankles was present, as mentioned by Sutton.[18]

The laboratory data showed the urine to contain bile, a few finely granular casts and a few red blood cells. The erythrocytes numbered 4,500,000, the leukocytes 12,500 with 80 per cent polymorphonuclears. The concentration of hemoglobin was 90 per cent (Dare). The blood and spinal Wassermann tests were negative. The blood platelets numbered 110,000 per cubic millimeter. The coagulation time was seven minutes. The icterus index was 40. The retention of bromsulphalein in sixty minutes was 60 per cent. The nonprotein nitrogen was 46 mg. in 100 cc. of blood.

Dextrose and insulin were given. March 12, 1930, the coma deepened; the temperature rose to 102.3 F. and the pulse to 120. That evening the respiratory rate rose to 36, the chest was full of bubbling râles, and the temperature was 104.3 F. just before the patient died.

The autopsy showed that the patient had been well nourished, with evidence of recent loss of weight. The skin approached a bronze color. The heart was normal. The lungs showed red hepatization of the lower lobes. The liver weighed 680 Gm. and showed myriads of fine yellow nodules studding the surface among a reddish-brown tissue. Microscopically, the liver tissue showed icterus, necrosis of the parenchyma and cirrhosis of the liver with compression of the lobules. Marked regeneration of the bile ducts was evident, with fatty infiltration around the lobule periphery.

There was no evidence that this young man had any hepatic disease. He had taken about 60 grains (4 Gm.) of "Atophan" daily for three months for relief of pain. The history and the clinical course, with the autopsy, leave little doubt that cinchophen was the toxic agent.

Cases of Poisoning with Cinchophen

Author	Number of Patients	Died	Recovered	Autopsy
Anderson, S. O., and Teter, O.: J. A. M. A. **93:** 2 (July 13) 1929	1	1	..	1
Brown, L.: Brit. M. J. **2:** 37, 1926	2	2	..	..
Braun, L. I.: J. M. A. South Africa **3:** 157 (March 29) 1929	1	..	1	..
Beaver and Robertson (footnote 16)	5	5	..	5
Cabot (footnote 11)	1	1	..	1
New England J. Med. **205:** 133 (July 16) 1931	1	1	..	1
Dassen, R.: Semana med. **36:** 368, 1929; abstr. J. A. M. A. **92:** 1563 (May 4) 1929	2	..	2	..
DeRezende, Cassio.: Brazil-med. **41:** 1005 (Sept. 24) 1927	3	..	3	..
Danger of "Atophan," London letter, J. A. M. A. **90:** 1229 (April 14) 1929	1	1	..	1
Elliot, A. H.: J. A. M. A. **61:** 1376, 1913	1	1	..	..
Evans (footnote 7)	3	..	3	..
Frenzel, W. C.: Wisconsin M. J. **28:** 264, 1927	1	..	1	..
Gargell, S. L.: New England J. Med. 183 (Jan. 28) 1932	3	..	3	..
Glover (footnote 8)	1	..	1	..
Herrick (footnote 3)	1	..	1	..
Haudek, M.: Wien klin. Wchnschr. **40:** 205 (Feb. 17) 1927	1	..	1	..
Hitzenberger, H.: Wien klin. Wchnschr. **40:** 205 (Feb. 17) 1927	2	1	1	1
Klinkert, D.: Therap. d. Gegenw., July, 1926	1	..	1	..
Klin. Wchnschr. **6:** 24 (Jan. 1) 1927	1	..	1	..
Therap. d. Gegenw. **69:** 140 (March) 1928	1	..	1	..
Kingreen, O.: Deutsche med. Wchnschr. **53:** 971 (Jan. 28) 1927	1	..	1	..
Langdon-Brown (footnote 6)	2	2	..	1
Lowenthal, Mackay and Lowe (footnote 20)	2	2	..	2
Motzfeldt, K.: Norsk mag. f. lægevidensk. **90:** 283 (March) 1929	1	1	..	..
Lind (footnote 19)	1	1	..	1
von Muller (footnote 2)	1	..	1	..
McVicar, C. S., and Wier, J. F.: M. Clin. N. America **12:** 1526, 1929	1	1	..	1
Miller, M.: Gesellch. f. inn. Med. u. Kinderh., Feb. 13 1913; Abstr. Therap. Monatsh. **27:** 468, 1913	1	..	1	..
Phillips (footnote 4)	1	..	1	..
Parsons and Harding (footnote 13)	4	4	..	4
Petty, M. J.: Brit. M. J. **2:** 442, 1928	1	..	1	..
Rabinowitz (footnote 12)	7	4	3	3
M. Clin. N. America **11:** 1025, 1928	2	..	2	..
Rake, G. W.: Guy's Hosp. Rep. **77:** 229, 1927	1	1	..	1
Reichle, H. S.: Arch. Int. Med. **44: 2** (Aug.) 1929	2	2	..	2
Scully (footnote 14)	1	..	1	..
Schroeder (footnote 5)	17	..	17	..
Stacy, L. J., and Van Zant, F. R.: Minnesota Med. **13:** 281 (May) 1930	1	1	..	1
Singer, S.: Wien klin. Wchnschr. **40:** 238 (Feb. 17) 1927	1	1	..	1
Schwartz, G.: Wien klin. Wchnschr. **40:** 238 (Feb. 17) 1927	1	..	1	..
Sutton (footnote 18)	1	1	..	1
Worster-Drought (footnote 15)	1	..	1	..
Weil, P.: Med. Welt **2:** 257 (Feb. 18) 1928	1	1	..	1
Wells (footnote 10)	1	1	..	1
Willcox (footnote 9)	3	1	2	..
	89	37	52	30

13. Parsons, L., and Harding, W. G. 2d: Am. J. M. Sc. **181:** 115-125 (Jan.) 1931.
14. Scully, F. J.: Idiosyncrasy to Cinchophen, J. A. M. A. **82:** 623 (Feb. 23) 1924.
15. Worster-Drought, C.: Brit. M. J. **1:** 148 (Jan. 27) 1923.
16. Beaver, D. C., and Robertson, H. E.: Proc. Staff Meet., Mayo Clin. **6:** 216 (April 8) 1931.
17. Rotter, L.: Chem. Abstr. **12:** 2384, 1918.
18. Sutton, D. C.: Acute Yellow Atrophy of the Liver Following the Taking of Cinchophen, J. A. M. A. **91:** 310 (Aug. 4) 1928.

CASE 2.—J. P., a man, aged 65, a painter, entered St. Elizabeth Hospital, Jan. 1, 1931, with the complaint of arthritis and jaundice. For four months he had been taking "Atophan," eight tablets daily, for relief of pain. No history of indigestion could be obtained. Two and a half weeks before admission he was obliged to quit work because of progressive weakness, loss of appetite, increasing drowsiness and nausea. Jaundice developed, and in a few days he began to vomit. He noticed that the urine was dark and that it "burnt." He was given "liver tablets" by his physician without relief and a week before admission began to have periods of transient delirium. The urine became diminished in amount, he was unable to take nourishment, incontinence of urine and feces developed, the delirium increased, and the skin became bronzed. The tongue became dry, the lips cracked and he was admitted to the hospital in delirium and had to be mechanically restrained.

The patient was poorly nourished. The temperature was 100.1 F., pulse 84 and respiration 22. The heart and lungs were normal. The blood pressure was 86 systolic and 60 diastolic. The area of liver dulness was greatly diminished. No lead line was seen on the gums. Edema of the hands and feet was observed. The hands showed marked hypertrophic arthritis.

The laboratory data revealed that the urine contained a trace of albumin, bile, and a few finely granular casts. The concentration of hemoglobin was 85 per cent (Dare). The erythrocytes numbered 4,100,000 and the leukocytes 16,000, with 92 per cent polymorphonuclears. No stippling was seen. The blood and spinal Wassermann tests were negative. The nonprotein nitrogen was 62 mg. per hundred cubic centimeters of blood and the creatinine 2.1 mg. The icterus index was 54. The retention of bromsulphalein in sixty minutes was 85 per cent.

Dextrose and insulin were given. The general condition remained unchanged during the next four days. On the fifth day the coma deepened, the temperature rose to 104.4 F., the pulse to 136, a profuse perspiration covered the body, and death followed that evening.

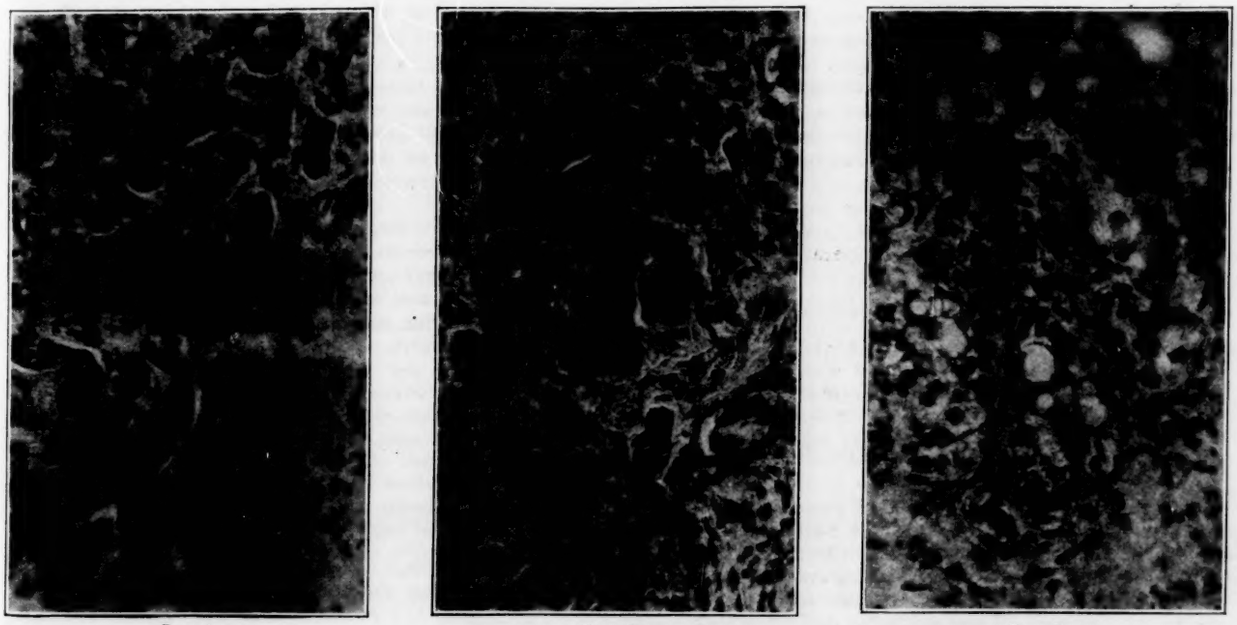
The autopsy revealed that the heart and lungs were normal. The liver was roughly nodular, similar to that in case 1 grossly. The gallbladder, ducts and pancreas were normal. The suprarenals were normal. The kidneys showed slight diffuse nephritis. On section, the liver showed icterus, degenerative necrosis of the parenchyma, increase in connective tissue and compression of regenerated liver lobules into cirrhotic formation. Completely intact lobules were not found.

This is a case of acute toxic cirrhosis in an elderly man without evidence of previous hepatic disease. For fourteen weeks he had taken 60 grains of "Atophan" daily to relieve pain. No other etiologic agent could be demonstrated.

CASE 3.—Mrs. E. L., aged 64, entered St. Elizabeth Hospital, Nov. 15, 1931, in coma. Her husband stated that she had been perfectly well except for an attack of "arthritis" in December, 1930, for which she had various treatments. In July, 1931, the pain became worse and she began to take four "Farastan" tablets (Mono-iodo-cinchophen) daily with relief of the pain. She felt well until eleven days before admission, when icterus was noticed in the sclerae. Within twenty-four hours the body was deeply jaundiced, nausea and vomiting occurred, the appetite was lost, and weakness became progressive. The next day she became apathetic and lapsed into coma two days later. There were no previous signs or symptoms of hepatic or biliary tract disease.

The patient was well nourished. She had hypertrophic arthritis of the hands. The temperature was 99.0 F., pulse 96 and respiration 22. The heart and lungs were normal. The blood pressure was 118 systolic and 88 diastolic. The liver dulness was diminished. The remainder of the physical examination was negative.

The day after admission, the icterus index was 40. The van den Bergh test gave an immediate direct reaction. The retention of bromsulphalein in sixty minutes was 70 per cent. Nonprotein nitrogen was 44 mg. and urea nitrogen 28 mg. per hundred cubic centimeters of blood. During the next four days, in spite of dextrose, insulin and fluids, the course was down hill and she died with a terminal rise in temperature to 104.3 F. and a profuse perspiration over the entire body.



Case 1 Case 2 Case 3

Microscopic appearance of liver.

The autopsy was done at the patient's home in a neighboring town and only inspection of the abdominal cavity was permitted. The liver was high under the diaphragm, the size of a large orange. The surface was nodular, with many fine yellow areas interspersed among a reddish-brown tissue. A portion was removed for microscopic study. The gallbladder, ducts and pancreas were normal. Microscopically there was seen extensive necrosis of the parenchyma with diffuse increase in connective tissue and compression of the liver lobules into nodular formation, very similar to case 2.

This elderly woman had no previous hepatic or biliary disease. Acute toxic cirrhosis developed after taking 14 grains (0.9 Gm.) of "Farastan" daily for about four months. No other etiologic agent could be demonstrated.

COMMENT

A study of the cases of cinchophen poisoning in the literature reveals that the toxic manifestations have no relation to the

amount of the drug ingested. Thus, the patient of Evans [7] took only 15 grains (1 Gm.) the second patient of DeRezende only 3 Gm. and the patient of Lind [19] about 5 Gm. Conversely, Hench and Rowntree, discussing Rabinowitz's [12] cases, report a patient who took large amounts (from 40 to 90 grains, or 2.6 to 6 Gm.) daily for a period of eighteen years without untoward effect. Rabinowitz suggests that certain predisposing factors exist which sensitize the liver parenchyma to the toxic action of cinchophen compounds. Among these factors he names gallbladder disease, cirrhosis of the liver, chronic alcoholism, pregnancy, chronic nephritis and a past history of jaundice. Again, other cases (here reported) give no clinical, laboratory or postmortem evidence of liver dysfunction. So-called safe methods of giving the drug, as intermittently, with sodium bicarbonate and the like are not without hazard, since Willcox [9] and Lowenthal [20] observed toxicity arising following these measures.

Owing to the increased number of cases of toxic hepatitis being reported in the literature due to cinchophen compounds, and to the lack of a safe method of administering the drug, it would seem logical to employ, as analgesics, compounds devoid of the insidious danger of poisoning.

SUMMARY AND CONCLUSIONS

1. Eighty-nine cases of hepatotoxicosis due to cinchophen or its congeners were collected in the literature. Fifty-two patients recovered. Thirty-seven fatal cases are reported with the diagnosis confirmed by autopsy in thirty cases. I observed three additional fatal cases, with postmortem examination.

2. Cinchophen and its compounds exert a destructive toxic effect on the hepatic parenchyma of certain sensitized persons. The essential clinical and pathologic observations are those of a specific type of toxic cirrhosis.

3. It seems apparent that the extensive employment of cinchophen compounds in the treatment of "arthritis" should be abandoned in favor of less hazardous preparations.

Harries Building.

19. Lind, S. C.: Ohio State M. J. **25**: 1228-1232 (Jan.) 1932.

20. Lowenthal, L. J. A.; Mackay, W. A., and Lowe, F. C.: Brit. M. J. **1**: 592 (April 7) 1928.

From the Division of Metabolic Diseases, Philadelphia General Hospital.

DIABETIC COMA WITH BLOOD SUGARS ABOVE ONE THOUSAND MILLIGRAMS: REPORT OF THREE CASES WITH RECOVERY FOLLOWING TREATMENT

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A case of diabetic coma with a blood sugar of 900 mg. per hundred cubic centimeters of blood was reported recently by Gray and Sansum.[1] Attention was drawn to the relatively few cases that have been reported in which recovery followed such a marked hyperglycemia. They were able to find only three cases besides their own. There can be no doubt that such cases are rare, but we feel that if all the unreported cases were collected the number would be somewhat increased. We here report three cases that were successfully treated in the metabolic ward of the Philadelphia General Hospital during the past five years.

CASE 1.—M. M., a woman, aged 58, white, was admitted in coma, with no history of diabetes. Members of the family stated that in the past six months she had lost 40 pounds (18 Kg.), in spite of a voracious appetite, and that she had frequently complained of weakness. There was also a history of thirst and polyuria. Two days before admission she became nauseated and vomited several times. She had been in coma eight hours before she arrived at the hospital.

The temperature was 96 F.; the pulse, 150. Respirations were 35. The blood pressure was 80 systolic and 25 diastolic.

Breathing was Kussmaul in type. There was markedly decreased intra-ocular tension. There was a heavy odor of acetone on the breath. The lungs were clear. The heart sounds were distant and quite rapid. There were no murmurs. Examination of the abdomen did not reveal palpable organs or masses. The extremities were limp and flaccid.

The blood sugar was 1,120 mg. per hundred cubic centimeters of blood on admission; the urea nitrogen of the blood, 45 mg., and the creatinine, 1.5 mg. The urine was strongly positive for sugar, acetone and diacetic acid, with a heavy trace of albumin and many hyaline and granular casts.

Examination of the blood revealed: Red blood cells, 3,500,000; hemoglobin, 13.6 Gm.; white blood cells, 13,600; polymorphonuclears, 87 per cent; lymphocytes, 13 per cent.

The Wassermann reaction of the blood was reported negative in all antigens.

In addition to blankets and hot water bottles, soap sud enemas, gastric lavage, digitalis hypodermically, and hypodermoclysis of 1,500 cc. of 5 per cent sodium bicarbonate [2] and 1,500 cc. of physiologic solution of sodium chloride, the patient received 230 units of insulin, 180 of which was given intravenously during the eight hours following admission. The patient became conscious during the night and was able to take fluids and orange juice by mouth. Blood sugar determinations, by the Folin-Wu technic, were as follows: 1,120 mg. at 8:30 a. m. (on admission); 960 mg. at 11 a. m.; 800 mg. at 1:45 p. m.; 560 mg. at 4:30 p. m.; 80 mg. at 11 p. m.; 478 mg. at 7 a. m., and 150 mg. at 7 a. m.

The patient was discharged in three weeks on a diet of 60 Gm. of protein, 220 Gm. of fat, and 80 Gm. of carbohydrate; with an insulin dosage of 15 units before breakfast and 10 units before supper, and a fasting blood sugar of 125 mg.

CASE 2.—H. H., a woman, aged 30, a Negress, with no history of diabetes before the onset of coma, had been vomiting for two days and was comatose for twelve hours before admission. Symptoms of polyuria, polydipsia and polyphagia could not be obtained from the husband.

The temperature was 97 F.; the pulse, 160; the respiratory rate, 30.

Breathing came in long sighing gasps. The tongue and mouth were dry. The skin was parched and wrinkled. The eyeballs were soft. The pupils were unequal and did not react to light. Some impairment was found over the lower right side of the chest, with a few fine, moist râles. The heart was not enlarged to percussion. Heart sounds were rapid but regular; there were no murmurs.

Blood sugar on admission was 1,080 mg. per hundred cubic centimeters of blood, with a carbon dioxide combining power of 11 volumes per cent. The urea nitrogen of the blood was 21 mg. Examination of the urine showed 4.4 per cent sugar; the urine was positive for acetone and diacetic acid, with a heavy cloud of albumin and many hyaline and granular casts.

The Wassermann reaction of the blood was ++++ in all antigens.

TABLE 1.—*Blood Sugar and Carbon Dioxide Combining Power in Case 2*

Blood Sugar, Mg.	CO_2 Volumes, Per Cent	Time
1,080 (Folin-Wu technic)	11	6:00 p. m. (on admission)
900	15	8:00 p. m.
332	20	10:30 p. m.
71	49	3:00 a. m.
140	63	7:00 a. m.
152	49	10:30 a. m.
203	60	3:00 p. m.

Treatment consisted of external heat, gastric lavage with 2 per cent sodium bicarbonate, soap suds enemas, hypodermoclysis of 1,000 cc. of 5 per cent sodium bicarbonate [2] and 1,000 cc. of physiologic solution of sodium chloride, with 500 cc. of 5 per cent sodium bicarbonate and 20 Gm. of dextrose by proctoclysis. During the night, from 6 p. m. until 7 a. m., the patient received 300 units of insulin, 100 of which was given intravenously as the initial dose. The patient was not conscious until the following afternoon, despite the fact that her blood sugar the next morning was 140 mg., and the carbon dioxide combining power 63 volumes per cent. She received a total of 50 units of insulin during the remainder of the day. The blood sugar and carbon dioxide combining power are given in table 1.

1. Gray, P. A., and Sansum, W. D.: Diabetic Coma with Marked Hyperglycemia and Recovery, J. A. M. A. **97**: 230 (July 25) 1931.

2. This procedure has been discontinued for the past two years, owing to an unfortunate slough which resulted from the conversion of sodium bicarbonate to sodium carbonate in the process of sterilization. At present sodium bicarbonate is given through a "Levin gastroduodenal" tube, which is left in place during the entire treatment of coma.

The patient was discharged on a diet of 60 Gm. of protein, 180 Gm. of fat and 100 Gm. of carbohydrate, with an insulin dosage of 10 units before breakfast and 10 units before supper, and a fasting blood sugar of 133 mg. per hundred cubic centimeters of blood.

CASE 3.—C. R., a Negress, aged 46, was not known to have diabetes. The history obtained from the family was that for the past two months the patient had suffered from polyphagia, polydipsia, polyuria and nocturia and had lost 32 pounds (14.5 Kg.) during this time. No medical advice was sought until the onset of coma. The patient was comatose for eleven hours before admission to the hospital.

The temperature was 96.5 F.; the pulse, 120; the respiratory rate, 25; the blood pressure, 90 systolic and 50 diastolic.

TABLE 2.—*Insulin Given in Case 3*

Units		
40	Intravenously	10:45 p. m. (on admission)
40	Subcutaneously	11:15 p. m.
40	Subcutaneously	11:50 p. m.
40	Subcutaneously	12:20 p. m.
40	Subcutaneously	1:20 a. m.
50	Subcutaneously	2:00 a. m.
30	Subcutaneously	4:00 a. m.
20	With orange juice, 275 Gm.	7:00 a. m.
Total, 300		

The patient was in deep coma; there was no response to external stimuli. Respirations were rapid, full and regular. There was a urinoid odor to the breath, but no acetone was detectable. The eyeballs were soft and compressible. The mouth was dry and the teeth were dirty. The skin was quite dry and dehydrated. Movements of the chest were diminished on the right side. The percussion note was impaired in both axillae. Breath sounds were harsh in the right axilla, with a few crackling râles. The pulse was almost imperceptible, and there was no enlargement of the heart on percussion. Sounds were rapid and distant. There were no audible murmurs. There was some rigidity in the lower left quadrant of the abdomen. There was a profuse purulent vaginal discharge, with excoriation and ulceration of the vulva of the left side. The extremities showed nothing of interest except marked diminution of the reflexes.

TABLE 3.—*Blood Sugar and Carbon Dioxide Combining Power in Case 3*

Blood Sugar, Mg.	CO_2 Volume, Per Cent	Time	
1,056 (Folin-Wu technic)	18	10:50 p. m.	6/12/31
1,296	12	11:55 p. m.	
960	14	11:30 p. m.	
600	14	3:30 a. m.	
338	25	5:30 a. m.	
140	19	7:00 a. m.	6/13/31
131	23	10:00 a. m.	
70	37	3:00 p. m.	
232	57	9:00 p. m.	
208	61	7:00 a. m.	6/14/31

Blood sugar on admission was 1,056 mg. per hundred cubic centimeters with a carbon dioxide combining power of 18 volumes per cent. One hour and five minutes later the blood sugar had risen to 1,296 mg. per cent and the carbon dioxide fallen to 12 volumes per cent in spite of the administration of 120 units of insulin, 40 of which had been given intravenously. The urea nitrogen of the blood was 55 mg.

Examination of the blood revealed: Red blood cells, 5,500,000; hemoglobin, 16.4 Gm.; white blood cells, 27,700; polymorphonuclears, 82 per cent; lymphocytes, 16 per cent; large lymphocytes, 2 per cent.

The urine was strongly positive for sugar, acetone and diacetic acid, with a heavy trace of albumin and myriads of leukocytes (catheterized specimen).

The Wassermann and Kahn reactions of the blood were strongly positive.

Treatment consisted of blankets and hot water bottles, soap suds enemas, gastric lavage of 2 per cent sodium bicarbonate, hypodermoclysis of 3,000 cc. of physiologic solution of sodium chloride, digitalis and caffeine sodium benzoate hypodermically, sodium bicarbonate, 30 grains (2 Gm.), every hour through the Jutte tube until 11 a. m. the next day, and insulin as shown in table 2.

The blood sugar determinations and the carbon dioxide combining power are shown in table 3.

June 13, 1931, a diagnosis of pneumonia was quite apparent and a roentgenogram taken with a portable machine showed consolidation of the lower portion of the right upper lobe. Urea nitrogen of the blood had risen to 80 mg., with a creatinine determination of 3.4 mg. Since 4 a. m. the patient had been noisy and irrational, but at 5 p. m. had become quiet and was resting comfortably. The patient received 830 Gm. of orange juice in addition to 2,500 cc. of physiologic solution of sodium chloride by hypodermoclysis during the day.

June 14, fasting blood sugar was 208 mg.; the carbon dioxide combining power, 61 volumes per cent; urea nitrogen, 33 mg., and creatinine 1.4 mg.

Recovery from the pneumonia was uneventful and the patient was discharged forty-five days after admission on a diet of 60 Gm. of protein, 150 Gm. of fat and 100 Gm. of carbohydrate, with an insulin dosage of 8 units before breakfast and 5 units before supper.

SUMMARY

1. In three cases of diabetic coma with very high blood sugar, recovery occurred.

2. We believe that clinicians have failed to report other cases.

3. We warmly endorse the administration of sodium bicarbonate as an adjunct to insulin. In our experience, we have never seen harmful results from its administration by means of a stomach tube during the treatment of diabetic coma.

803 Pine Street.

DERMATITIS VENENATA DUE TO SHOE LEATHER

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LOS ANGELES

Lewis[1] has recently reported two cases of dermatitis affecting the feet and ankles, in which the causative agent was definitely proved to be shoe leather. The following case is reported to point out that not all eruptions of the feet are of fungous origin and that other factors must be considered.

REPORT OF CASE

W. S., a man, aged 60, seen, Jan. 12, 1932, had an eruption on the feet which had been present for the past seven months. He had been under the care of several physicians, who had made various diagnoses, including eczema and fungous infection, and had applied various ointments together with twelve ultraviolet ray treatments.

There was a marked erythema of both feet on the dorsum, sides and ankles, extending up the ankle to the level of the shoe top and abruptly ending. There were large, thick scales, the size of a finger nail, and crusts beneath which there was a good deal of fissuring and oozing. There was no maceration or scaling between any of the toes.

The following history was obtained: In February, 1931, the patient purchased a new pair of black shoes which were ordered from a distant manufacturer. These shoes were worn on Sundays and occasionally in the evenings. The last week in June, 1931, an eruption began on the dorsum of the feet as a redness, which shortly became vesicular and started to ooze. He continued to wear these shoes at occasional intervals. His feet became so swollen and sore that for three or four days at a time it was impossible to wear any shoes. About every seven to ten days the entire process of itching, burning, redness, swelling and oozing would be repeated, although the feet were never entirely free from the eruption since the onset. About six or eight weeks previous to the time we first saw him, he noticed a moderately erythematous, scaly eruption on the wrists and forearms. He had never had the shoes dyed, nor did he believe that his feet had ever been wet while wearing the shoes. His feet, as a rule, perspired only moderately.

From the Department of Dermatology, College of Medical Evangelists.

1. Lewis, G. M.: Dermatitis Venenata from Shoe Leather, Arch. Dermat. & Syph. 24: 602 (Oct.) 1931.

A leather piece the size of a postage stamp was removed from one of the shoe tongues, the inner cotton fabric lining was removed from the leather, and both pieces were applied to the inner surface of the forearm where the skin was normal. These were removed at the end of twenty-four hours and no reaction was present. The following day both areas were markedly erythematous with small vesicles and since then these two test areas had passed through the same stages of eruption as noted on the feet. These positive "patch test" reactions were still visible six weeks later. A control patch test done on a normal person with the same leather and lining was negative. No fungi were demonstrated from between the toes or from the scales.

Dermatitis venenata due to shoe leather.

Treatment consisted of avoidance of this particular pair of shoes and the application of soothing lotions and ointments. The arms have entirely cleared, the feet are nearly well, and there has been no exacerbation since the patient stopped wearing the shoes.

2007 Wilshire Boulevard.

Economic Burden of Mental Disease.—The economic burden due to mental disease has been called to the attention of the people of New York State during the past eight years by three campaigns on behalf of proposals for bond issues for the building of state institutions. The proposals, all of which were approved by the voters, provided, in 1923, for a bond issue of $50,000,000 for state hospitals and other institutions; in 1925, for a bond issue of $100,000,000 for state institutions and other improvements, to be made available at the rate of $10,000,000 a year; and in 1930, for a bond issue of $50,000,000 for state hospitals and state prisons. About $90,000,000 of the proceeds of these bond issues has been or will be devoted to the construction of hospitals for patients with mental disease. Another phase of the burden was emphasized by the appropriation, in 1931, of nearly $24,000,000 for the maintenance of patients with mental disease in the hospitals of the New York State Department of Mental Hygiene.—Pollock, H. M.: Economic Loss to New York State and the United States on Account of Mental Disease, 1931, *Ment. Hyg.* **16**:289 (April) 1932.

Special Article

THE PRESENT STATUS OF VITAMIN B_2 (G)

HISTORICAL SURVEY

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[EDITORIAL NOTE.—The following article is one of a series on the Present Status of the Knowledge of Vitamins, prepared under the auspices of a committee composed of Morris Fishbein, chairman, Lafayette B. Mendel and Julius Hess, representing a joint committee of the Council on Pharmacy and Chemistry and the Committee on Foods. These articles have been considered by the Council on Pharmacy and Chemistry and by the Committee on Foods and are published under their auspices. The opinions expressed are those of the authors and not necessarily the opinions of the Council on Pharmacy and Chemistry or the Committee on Foods.]

During the last few years it has been definitely established that the dietary factor which McCollum and Kennedy [1] in 1916 termed water soluble B, generally recognized as a growth-promoting and appetite stimulating substance, is a mixture of vitamin B or vitamin B_1 and G or B_2. One of these is relatively thermolabile and has antineuritic and growth-promoting properties; the other is more stable after heating under pressure and also possesses growth-promoting properties and functions in the prevention and cure of pellagra-like symptoms in the rat. The former is also referred to as the antiberiberi, and the latter as the antipellagric vitamin. The nomenclature of these two dietary essentials has not yet been finally settled. The American biochemists have adopted the letter B for the antiberiberi factor and the term G for the antidermatitis vitamin.[2] In this communication the term B_2, tentatively adopted by the biochemists of England, will be employed to represent the antipellagric vitamin.[3]

As early as 1919, Mitchell [4] wrote an excellent review of the literature on the subject of vitamin B and questioned the identity of the antineuritic factor of Eijkman,[5] Grijns [6] and Funk [7] with the growth-promoting substance of McCollum and Kennedy.[1] Although Mitchell did not submit any experimental evidence, his critical analysis was so sound that his paper served as a great stimulus for further fruitful research. His arguments were as follows: 1. The green vegetables, such as cabbage and spinach, are rich sources of water-soluble B, compared with whole cereal grains, but are low in the concentration of the antineuritic factor. The carrot was given as another illustration of a fairly rich source of the growth-promoting factor for the rat but deficient in the antineuritic substance essential for the prevention and cure of polyneuritis in the pigeon.

From the Laboratory of Agricultural Chemistry, University of Arkansas.

1. McCollum, E. V., and Kennedy, Cornelia: J. Biol. Chem. **24**: 491 (April) 1916.
2. Report of Committee on Vitamin B Terminology of American Society of Biological Chemists: Science **69**: 276 (March 8) 1929.
3. This nomenclature has been adopted in this paper in accordance with wishes of the Council on Pharmacy and Chemistry.
4. Mitchell, H. H.: J. Biol. Chem. **40**: 399 (Dec.) 1919.
5. Eijkman, Christiaan: Polyneuritis bij hoenderen, Geneesk. Tijdschr. v. Nederl. Indië **36**: 214, 1896. Note sur la prophylaxie du béribéri, Janus **2**: 23, 1897; Ein Versuch zur Bekämpfung der Beriberi, Virchows Arch. f. path. Anat. **149**: 187, 1897.
6. Grijns, Gerrit: Polyneuritis gallinarum, Geneesk. Tijdschr. v. Nederl. Indië **41**: 3, 1901.
7. Funk, Casimir: J. Physiol. **43**: 395, 1911; **45**: 75, 1912.

2. The paralytic symptoms observed in rats on vitamin B-deficient diets are not specific for this avitaminosis. 3. There is a lack of carefully controlled experiments on solubility and thermostability of the two substances, so it is impossible to make definite conclusions as to their identity or nonidentity.

In 1920 there appeared a paper by Emmett and Luros,[8] entitled "Are the Antineuritic and the Growth-Promoting Water-Soluble B Vitamins the Same?" in which they presented evidence that the "antineuritic factor (pigeons)" is totally destroyed when heated for two hours at 120 C. and 15 pounds pressure, while the "water-soluble B vitamine (rats)" appears to be stable to heat under such treatment. From these observations they tentatively suggested that the antineuritic (pigeons) and the growth-promoting (rats) factors are not the same and that "it would be better to consider them as different until there is further proof to the contrary." This work constituted the first experimental evidence concerning the dual nature of what is now known as the vitamin B complex, but apparently this paper did not for some years receive the attention it duly deserved.

In 1923, Levene and Muhlfeld [9] reported a considerable variation in distribution of the antineuritic and growth-promoting principles in various samples of brewers' and bakers' yeasts, from which results they concluded that these two dietary essentials may not be identical.

In February, 1926, Smith and Hendrick [10] presented the first convincing evidence, followed later in the same month by Goldberger, Wheeler, Lillie and Rogers,[11] demonstrating the dual nature of vitamin B.

While engaged in the study on the effect of dietary deficiencies on experimental tuberculosis in the albino rat, Smith and Hendrick found that a diet composed of 40 per cent rolled oats (6 per cent protein) plus 10 per cent purified casein, fortified with vitamin A [12] and inorganic salts, failed to produce normal growth. However, such a dietary regimen was successfully supplemented by dried brewers' yeast autoclaved for six hours at 15 pounds pressure, which procedure completely destroyed vitamin B. They therefore concluded that dried brewers' yeast contains some factor other than vitamin B.

Goldberger and his associates demonstrated that autoclaved dried bakers' yeast (Fleischmann's wort-grown, low temperature), as a source of "water-soluble B" produced in rats rapid loss of weight, with or without polyneuritis, and, although an alcoholic extract of corn meal did alleviate or cure polyneuritis in the rat, the slight initial growth was followed by an arrest and subsequently by a decline of growth. However, if rats, fed a diet satisfactory in every respect with the exception of water-soluble B, were given a combination of small proportions of the autoclaved yeast and the extract of maize meal, the animals made considerable growth. The autoclaved yeast, as well as fresh lean beef or dried lean beef, they found potent for the prevention and cure of human pellagra and a pellagra-like disease in the dog, black tongue. They provisionally named this relatively stable dietary substance P-P, or pellagra-preventive. Young rats, fed a diet containing 20 per cent of dried or fresh lean beef as the only source of vitamin B, declined in weight and died with or without polyneuritis. When signs of polyneuritis began to appear, if there was introduced in such a diet 5 per cent of the alcoholic corn extract (40 per cent of which, as the only source of vitamin B in the ration, did not permit growth in the rat), the animals, if they had not reached the premortal state, were cured of the polyneuritis and resumed growth. These investigators therefore concluded that the alcoholic extract of maize contains an essential that cures polyneuritis in the rat and, while not growth-promoting in itself, permits or promotes growth when combined in a diet otherwise complete for growth except for "water-soluble B" with a suitable proportion of a P-P containing substance, such as autoclaved yeast or beef (which in itself, within certain limits, neither prevents polyneuritis nor permits growth).

In May, 1926, Goldberger and Lillie [13] described their experiences in the experimental production of pellagra-like symptoms in the rat on a diet in which an 85 per cent alcoholic extract of corn served as the only source of vitamin B. The following is a description, in part, of the main symptoms they encountered:

> After a variable period following the arrest of growth, there has been observed in many of the animals so fed a tendency of the lids of one or both eyes to adhere together with, in some instances, an accumulation of dried secretion on the margin of the lids. [Following the appearance of the ophthalmia or at the time the eye lesions made their appearance, alopecia developed in most of the animals, and in some animals it has led to almost complete denudation of the head, neck and trunk.] With or without such loss of fur some of the animals have developed a dermatitis at one or more of the following sites: ears, front of neck and upper part of chest, forearms, backs of forepaws, shins, and backs of the hind paws. This dermatitis, particularly as it has affected the paws, forearms, neck and ears, has been sharply outlined as bilaterally symmetrical. . . . The ears seemed definitely reddened and thickened with what appeared to be a yellowish incrustation of dried serum. In healing, desquamation took place, leaving the skin of the pinna with a polished, glistening, somewhat parchment-like appearance. . . . In the cases in which the backs of the forepaws were affected, the skin was red and rough and, after healing, but before the renewal of the normal, fine, silky fur, the skin had a pale pink, glistening, new-skin appearance. The backs of the hind paws, when affected, presented at first an appearance as of a matting of the silky fur of this part, which then looked dull and thickened. Later this matted layer of fur began to fissure and crack and then gradually desquamated, leaving a denuded pale pink, glistening skin.

The shortest period for the production of this dermatitis was approximately seven weeks. In addition to the skin lesions, Goldberger and Lillie found a stomatitis comparable to that found in pellagra. These pellagra-like symptoms in the rat were cured by the inclusion in the diet of a fullers' earth adsorbate of yeast, which resulted in the clearing up of the lesions and was accompanied by a resumption of growth. The following are the conclusions of these investigators: "We may conclude, therefore, that while it is, on the whole, highly probable that the pellagra-like condition in the rat is the analogue of pellagra in man, it will require additional evidence to establish this beyond reasonable doubt."

8. Emmett, A. D., and Luros, G. O.: J. Biol. Chem. **43**: 265 (Aug.) 1920.

9. Levene, P. A., and Muhlfeld, M.: J. Biol. Chem. **57**: 341 (Sept.) 1923.

10. Smith, M. I., and Hendrick, E. G.: Pub. Health Rep. **41**: 201 (Feb. 5) 1926.

11. Goldberger, Joseph; Wheeler, G. A.; Lillie, R. D., and Rogers, L. M.: Pub. Health Rep. **41**: 297 (Feb. 19) 1926.

12. The existence of vitamin D had not been disclosed at that time.

13. Goldberger, Joseph; and Lillie, R. D.: Pub. Health Rep. **41**: 1025 (May 28) 1926.

In 1917, Chittenden and Underhill [14] reported a dietary disease in the dog which closely resembles human pellagra. The nitrogen of the diet on which this disease was produced was derived mainly from boiled peas. The rest of the constituents of the ration contained cracker meal and cottonseed oil. The main symptoms noted were anorexia, intensive salivation, foul mouth, bloody diarrhea and convulsions. From the recent observations of Underhill and Mendel [15] it is evident that this canine disease is of an entirely different character from the black tongue described by Goldberger and Wheeler.[16] Underhill and Mendel found the curative agent for their disease to be contained in butter fat, carrots and carotene and have concluded that the dietary factor deficient in their disease is probably associated with the carotenoids, while Goldberger and Wheeler [16] concluded that the missing constituent in their diet on which black tongue is produced is the antipellagric factor found in yeast and lean beef.

In August, 1926, Hauge and Carrick,[17] independently, made a differentiation between the water-soluble growth-promoting and antineuritic substances, based on their experiences in feeding experiments with baby chicks. They found that the particular yeast they employed was poor in the antineuritic substance but rich in the water-soluble growth-promoting substance, while corn was relatively rich in the antineuritic substance but poor in the growth-promoting substance. The authors stated: "It is concluded that the antineuritic vitamin and the water-soluble growth-promoting vitamin are not identical, although they may occur in the same food."

In 1927, Chick and Roscoe [18] of England corroborated the main observations of Goldberger and Lillie,[13] designating the stable factor as B_2. They suggested that they might be dealing with more than one dietary deficiency, for animals deprived of B_2 occasionally remained stunted in growth but showed no especial dermatitis.

In 1927 there also appeared the confirmatory evidence of Salmon [19] and of Sherman and Axtmayer [20] of this country.

Salmon prepared a fullers' earth fraction which prevented experimental polyneuritis of pigeons but did not induce growth of rats. The residue, which possessed extremely weak antineuritic or growth-promoting action when fed alone, had a marked growth-promoting action when added to the antineuritic fraction.

Salmon also found the seeds of the velvet bean and soy bean to have a higher antineuritic value than the leaves of these legumes, but his comparative tests showed these leaves to be more potent than the seeds in the growth-promoting action.

Sherman and Axtmayer [20] reported a supplementary relation between whole wheat and dried skimmed milk but no such supplementary relation between the dried milk and the autoclaved yeast. Hence, they concluded that milk is relatively richer in vitamin B_2 than in vitamin B_1.

In 1930, Norris and Ringrose [21] reported the occurrence of "a pellagrous-like" syndrome in chicks, which they cured with autoclaved yeast.

PHYSICAL AND CHEMICAL PROPERTIES

Thermostability.—In 1930, Chick and Copping [22] and Chick and Roscoe,[23] in quantitative studies, demonstrated that the "so-called stable antipellagric factor" becomes unstable in an alkaline medium when heated for certain periods at a temperature of from 122 to 125 C. At p_H 5.0 no loss in vitamin B_2 potency could be detected on heating yeast for two hours at from 90 to 100; about 50 per cent was lost on heating the yeast for from four to five hours at 123; at p_H 3.0 the loss was the same with yeast and with a yeast extract. When the reaction was alkaline (p_H 10-9.5), about 30 per cent of the vitamin B_2 originally contained in the yeast extract was lost in ten days at room temperature (summer). On heating for two hours at from 98 to 100 (p_H 8.3), the loss was about 50 per cent and on autoclaving for from four to five hours at 122-125 (p_H 8.3-10), between 75 and 100 per cent.[23]

Fractionation and Concentration.—In 1928, Salmon, Guerrant and Hays [24] reported their results of studies on the effect of hydrogen ion concentration on adsorption of the active factors of vitamin B complex by fullers' earth and found that the maximum adsorption of B_1 was obtained in a zone between p_H 3.0 and p_H 5.5, with the optimal point at p_H 4.0. The maximum adsorption of B_2 by fullers' earth occurred at p_H 0.08, the most acid solution tested.

In 1927, Kinnersley and Peters [25] perfected a method for the preparation of a vitamin B concentrate from yeast, which can be summarized as follows: After making an aqueous extract, inert ingredients are removed first with neutral lead acetate, followed by mercuric sulphate. After the separation of the metals from the solutions, the filtrate is brought to a p_H of 7.0 with sodium hydroxide and the vitamin adsorbed on purified norite, which is an activated charcoal. The vitamin is then released from the norite by repeated extraction with tenth normal hydrochloric acid.

In 1928, Chick and Roscoe [26] stated that they found this concentrate, which Kinnersley and Peters [25] named torulin, to be very potent in B_1 but practically deficient in B_2 and, employing this B_1 extract, perfected a method for the determination of B_2 in food materials, which will be described briefly later in the text.

In a recent attempt to separate vitamin B_2 from vitamin B_1 in yeast, Chick and Roscoe [27] found that vitamin B_2 is insoluble and vitamin B_1 is soluble, in alcohol of 92 per cent by weight. The method used to produce a separation with strong alcohol destroyed vitamin B_2. The attempt to prepare a vitamin B_2 concentrate free from vitamin B_1 by the use of alcohol resulted in failure.

Reaction with Nitrous Acid.—In 1928, Levene [28] reported that by means of nitrous acid the activity of the heat-stable factor is destroyed, whereas that of the heat-unstable factor remains intact. These observations

14. Chittenden, R. H., and Underhill, F. P.: Am. J. Physiol. **44**: 13 (Aug.) 1917.
15. Underhill, F. P., and Mendel, L. B.: Am. J. Physiol. **83**: 589 (Jan.) 1928.
16. Goldberger, Joseph; and Wheeler, G. A.: Pub. Health Rep. **43**: 172 (Jan. 27) 1928.
17. Hauge, S. M., and Carrick, C. W.: J. Biol. Chem. **69**: 403 (Aug.) 1926.
18. Chick, Harriette; and Roscoe, Margaret H.: Biochem. J. **21**: 698, 1927.
19. Salmon, W. D.: J. Biol. Chem. **73**: 483 (June) 1927.
20. Sherman, H. C., and Axtmayer, J. H.: J. Biol. Chem. **75**: 207 (July) 1927.
21. Norris, L. C., and Ringrose, A. T.: Science **71**: 643 (June 20) 1930.
22. Chick, Harriette; and Copping, Alice M.: Biochem. J. **24**: 932, 1930.
23. Chick, Harriette; and Roscoe, Margaret H.: Biochem. J. **24**: 105, 1930.
24. Salmon, W. D.; Guerrant, N. B., and Hays, I. M.: J. Biol. Chem. **80**: 91 (Nov.) 1928.
25. Kinnersley, H. W., and Peters, R. A.: Biochem. J. **21**: 777, 1927.
26. Chick, Harriette; and Roscoe, Margaret H.: Biochem. J. **22**: 790, 1928.
27. Chick, Harriette; and Roscoe, Margaret H.: Biochem. J. **23**: 504, 1929.
28. Levene, P. A.: J. Biol. Chem. **79**: 465 (Oct.) 1928.

were not confirmed by Chick,[29] in 1929, who found that a vitamin B_2 preparation from yeast possessed the same potency after as before treatment with nitrous acid, when tested on young rats. The recent conclusions of Sherman and Whitsitt[30] are essentially in harmony with those of Chick; namely, that vitamin B_2 in itself is stable toward nitrous acid. They state, however, that they found that "certain conditions of loss of vitamin B_2, as in the work of Levene and in certain parts of our own work, may perhaps better be considered as indicating more or less destruction of the newer and not yet clearly defined factors which are now being found to be essential for the growth of rats." The final conclusion of the latter investigators is that vitamin B_1 behaves in vitro more like a nitrogenous base and vitamin B_2 more like a neutral organic substance.

RELATION TO NUTRITION

Quantitative Biologic Method of Determination.—In 1928, Chick and Roscoe[26] developed the following biologic method for the evaluation of vitamin B_2 in food materials: Young rats, about 4 weeks old and weighing from 40 to 50 Gm., are placed on a basal diet, satisfactory in every respect with the exception of vitamin B. They are kept on this ration for ten days and are then separated in individual cages with raised screens to prevent coprophagy.[31] After a preliminary period of two weeks of vitamin depletion, a daily dose of 0.1 cc. of the antineuritic concentrate of Kinnersley and Peters[25] (equivalent to 0.6 Gm. of the original yeast, dry weight) is administered to provide an abundance of vitamin B_1, and only negligible traces of vitamin B_2. After from three to four weeks from the beginning of the experimental feeding, the young rat is ready for the assay of vitamin B_2 in any material. The minimum dose which gives an average weekly increase of from 10 to 12 Gm. is considered the vitamin B unit for comparison.

In 1929, Bourquin[32] described a biologic procedure which is a modification of the quantitative method of Sherman and Spohn[33] developed for the vitamin B complex. Her diet consisted of purified casein, 18; Osborne and Mendel salt mixture, 4; butter fat, 8; cod liver oil, 2; corn starch, 68, a part of which carried an alcoholic extract of whole wheat for each hundred grams of diet as a source of B_1. The whole wheat presumably furnished insignificant amounts of B_2. Young rats, from 28 to 29 days of age, are placed on this diet for from fourteen to eighteen days and are confined in individual cages with raised screen bottoms until they cease to grow, when the test period is begun. One animal from each litter is kept on the basal diet minus the alcoholic extracts of whole wheat which serves as a negative control. The gain in weight of the test animals over that of the controls indicates the relative amounts of vitamin G present in the materials fed. The vitamin B_2 unit is described as the average gain of 3 Gm. weekly per animal for a period of eight weeks, or a gain of 24 Gm. per animal for the test period.

Recently Munsell[34] reported that more regular and dependable results can be obtained with the Bourquin procedure if 30 per cent of white corn as a source of vitamin B_1 is used in the diet. The author claims that this amount of white corn in the diet furnishes an abundance of B_1 and a neglible amount of B_2.

Distribution of Vitamin B_2 in Food Materials.—Employing the method of Chick and Roscoe,[26] Aykroyd and Roscoe[35] list the distribution of vitamin B_2 in foodstuffs in the following descending order: dried ox liver, dried yeast, autoclaved yeast, meat (dried steak), milk solids, dried egg yolk, wheat germ, wheat bran, wheat pollard, dried peas, whole wheat (Manitoba), whole wheat (English), whole maize (white), whole maize (yellow), maize germ meal, wheat endosperm and maize endosperm.

Hunt[36] found that wheat and corn contain approximately the same amounts of vitamin B_1 and B_2 but states that they are richer in B_1 than B_2.

Hunt and Krauss[37] reported that milk from cows under winter feeding conditions was potent in B_2 and relatively poor in B_1.

Recently Hetler, Meyer and Hussemann[38] published a detailed study of quantitative determinations of the content of B_1 and B_2 in cereals. They found that a diet including as much as 50 per cent of any of the cereals would supply enough vitamin B_2 for approximately normal growth, while 25 per cent of any of the cereals provided enough vitamin B_1. I[39] found rice polishings to be abundant in vitamin B_2 for growth. This is confirmed by Hetler and her associates.[38]

Vitamin B_2 and Anorexia.—Burack and Cowgill[40] recently reported that in the anorexia developed in dogs on diets deficient in the vitamin B complex, either (1) the antineuritic vitamin is the sole etiologic agent or (2) another substance, not vitamin B_2, is required to supplement the antineuritic factor in preventing and correcting the anorexia they investigated.

Graham and Griffith[41] emphasize the importance for normal appetite of both the antineuritic vitamin and another factor which is found in autoclaved liver. Whether this factor contained in autoclaved liver is vitamin B_2 still remains to be demonstrated.

Vitamin B_2 and Lactation.—In 1924 I demonstrated that the albino rat requires considerably more of the vitamin B complex for lactation than for growth. These results were followed by quantitative data in 1927. The observations in our laboratory have been confirmed by Macy and her co-workers[42] and by Evans and Burr.[43] The latter investigators, however, maintained that "lactation delinquency is due to inadequate antineuritic vitamin and in no degree to inadequate growth-promoting vitamin B.[43] Our results, on the other hand, demonstrated that both factors, B_1 and B_2, are essential in much greater amounts for lactation than for growth.[39] The apparent discrepancy probably lies in the failure of Evans and Burr with their biologic technic to find vitamin B_2 in "tikitiki,"[44] which is now

29. Chick, Harriette: Biochem. J. **23**: 514, 1929.
30. Sherman, H. C., and Whitsitt, M. L.: J. Biol. Chem. **90**: 153 (Jan.) 1931.
31. Steenbock, Harry; Sell, M. T., and Nelson, E. M.: J. Biol. Chem. **55**: 399 (March) 1923.
32. Bourquin, A.: Dissertation, Columbia University, New York, 1929.
33. Sherman, H. C., and Spohn, A. J.: J. Am. Chem. Soc. **45**: 2719, 1923.
34. Munsell, Hazel E.: J. Nutrition **4**: 203 (July) 1931.
35. Aykroyd, W. R., and Roscoe, Margaret H.: Biochem. J. **22**: 483, 1929.
36. Hunt, C. H.: J. Biol. Chem. **78**: 83 (June) 1928.
37. Hunt, C. H., and Krauss, W. E.: J. Biol. Chem. **79**: 733 (Oct.) 1928.
38. Hetler, Rossleene A.; Meyer, C. R., and Husselmann, Dorothy L.: Bull. 369, Univ. Illinois Exper. Sta., May, 1931.
39. Sure, Barnett: J. Biol. Chem. **80**: 297 (Nov.) 1928.
40. Burack, Ethel; and Cowgill, G. R.: Proc. Soc. Exper. Biol. & Med. **28**: 750 (April) 1931.
41. Graham, Claire E., and Griffith, W. H.: Proc. Soc. Exper. Biol. & Med. **28**: 1086 (June) 1931.
42. Macy, Icie G.; Outhouse, Julia; Graham, Alice; and Long, M. Louisa: J. Biol. Chem. **73**: 189 (May) 1927.
43. Evans, H. M., and Burr, G. O.: J. Biol. Chem. **76**: 263 (Jan.) 1928.
44. Tikitiki is an alcoholic extract from rice polishings used in the Philippines as a specific in the cure of infantile beriberi.

reported by Hetler, Meyer and Husselman [38] to contain appreciable amounts of the antipellagric factor. The claims, however, of Hetler and her associates that more of B_2 than of B_1 is essential for lactation are not convincing since their "tikitiki," which furnished the B_1 factor, according to their own statement supplied appreciable quantities of the B_2 vitamin. Further carefully controlled quantitative experiments are necessary to establish this point definitely.

The Influence of Vitamin B_2 Deficiency on Pathologic Changes in Blood and Tissues.—Smith [45] and I recently reported that neither arrest of growth, loss of weight, nor accompanying dermatitis, as a result of vitamin B_2 deficiency, had any influence on apparent or true blood sugar or alkali reserve of the albino rat. There was a reduction, however, in the glycogen content of the liver in animals that had lost considerably in weight during periods of inanition. Although vitamin B_1 per se produces a marked reduction in liver glycogen,[46] it still remains to be demonstrated whether vitamin B_2 per se produces a similar physiologic effect.

That pellagra is an avitaminosis, produced by a deficiency of a dietary factor, associated with the vitamin B complex, is now generally recognized. Recently, however, Bliss [47] has advanced the theory that pellagra is an iron-deficiency disease and claims that the curative agent of the vitamin-containing foods employed by Goldberger and other investigators is not vitamin B_2 (G) but iron. Although it has not yet been conclusively established whether the pellagra-like disease in the rat is the analogue of human pellagra, it may be of interest to mention here that the secondary anemia that we have encountered in this avitaminosis in our laboratory [48] in rats in which dermatitis was produced has no connection with a mineral deficiency, since our diets had an abundance of ferric citrate and since in such anemia we found no response to the administration of the ash from yeast.

We did not find any significant changes in the total and differential leukocyte count in vitamin B_2 deficiency.[48]

In 1928, Salmon, Guerrant and Hays [49] confirmed the work of Goldberger and Lillie,[13] but in addition reported the presence of a gram-positive coccus from skin and arthritic lesions, parenchymatous organs and the walls of the intestine.

In 1929, Sherman and Sandels [50] described their experiences with vitamin B_2 deficiency in the albino rat. Their observations were similar to those reported by Goldberger and Lillie [13] and by Chick and Roscoe.[18]

In 1928, Findlay [51] described the following pathologic changes in vitamin B_2 deficiency: 1. Failure of growth occurs and, as terminal phenomena, loss of appetite and fall in body temperature. 2. Nervous symptoms are absent, but after from eight to ten weeks on the deficient diet there are lesions of the skin, buccal mucous membrane and tongue, which are very similar to those of pellagra in man. 3. Death occurs in from two to three weeks after the onset of the skin changes. 4. There is a papillomatous condition of the cardiac end of the stomach. 5. The histologic changes characteristic of inanition are present in rats as the result of a deficiency of vitamin B_2. 6. Hypertrophy of the suprarenals occurs in rats lacking either vitamin B_2 or vitamin B_1.

Findlay [51] also found dermatitis preceding alopecia, vesicles, swollen collagen fibers, atrophy of elastic tissue and congestion of the small blood vessels in the cutis, atrophy of the testicles, and certain lesions of the tongue and the stomach. We were unable in our laboratory to confirm the occurrence of these changes.

Thatcher, Walker and I [52] observed that the lesions in the skin of the albino rat suffering from vitamin B_2 deficiency were not absolutely comparable with human pellagra. Hyperkeratosis and parakeratosis with ulceration occurred, which might have eclipsed the early picture. Rarefaction of the superficial corium, as well as the fibrolytic stage, mitoses and the erythematous change described by Denton [53] as occurring in human pellagra, were not observed. Congestion of the intestine, found in our laboratory, is an observation that can be correlated with pellagra. However, chromogenic urine and incontinence of urine, observed in some of our animals, are not prominent in human pellagra according to the experience of Thatcher [54] with numerous pellagrins. Furthermore, in our experience with experimental rat pellagra, diarrhea was not a prominent symptom, as in many pellagrins. Constipation was also not present. Salivation did not occur, as is reported by Sherman and Sandels.[50] Stomatitis, one of the main symptoms reported by previous investigators, was not present in our rats. Loss of weight was common, and anorexia occurred in the terminal stages of the avitaminosis. These are frequent symptoms in human pellagra. The presence of ophthalmia (in some animals) and the lack of involvement of the nervous system could not be correlated with the human disease.

In summarizing this work, Thatcher, Walker and I stated: "In our opinion, neither we nor other investigators preceding us have actually produced a disease in the rat comparable with human pellagra. All that can be said is that pellagra-like symptoms have been experimentally produced."

Day, Langston and O'Brien [55] have recently reported that cataracts, usually preceded by inflammatory changes in the lids and cornea, occur with regularity in young albino rats receiving a diet deficient in vitamin B_2. They state that further progress of such changes was stopped by the addition of vitamin B_2 to the diet.

Complexity of Vitamin B_2.—Recently Roscoe [56] produced experimental evidence to the effect that vitamin B_2 is a complex composed of two dietary essentials. She found that when egg white is given as a source of vitamin B_2, the lack of a third factor, which she tentatively termed Y, necessary for the normal growth of the rat becomes apparent. "This factor is present in autoclaved yeast extracts and in watercress, lettuce, spinach, and cabbage, but the amounts present in lettuce and etiolated cabbage leaves are less than in the dark green leaves tested, and the amount present in the onion bulb is still smaller." [56]

45. Sure, Barnett; and Smith, Margaret E.: Proc. Soc. Exper. Biol. & Med. **28:** 442 (Jan.) 1931.
46. Sure, Barnett; and Smith, Margaret E.: The Effect of a Deficiency of the Vitamin B Complex on the Lipid Metabolism and Glycogen Content of the Liver of the Albino Rat, Arch. Int. Med., to be published.
47. Bliss, Sidney: Science **72:** 578 (Dec. 5) 1930.
48. Sure, Barnett; Kik, M. C., and Smith, Margaret E.: Proc. Soc. Exper. Biol. & Med. **28:** 498 (Feb.) 1931.
49. Salmon, W. D.; Guerrant, N. B., and Hays, I. M.: J. Infect. Dis. **43:** 426 (Nov.) 1928.
50. Sherman, H. C., and Sandels, M. R.: Proc. Soc. Exper. Biol. & Med. **26:** 535 (March) 1929.
51. Findlay, G. M.: J. Path. & Bact. **31:** 353 (April) 1928.
52. Thatcher, H. S.; Sure, Barnett; and Walker, Dorothy J.: Avitaminosis, Arch. Path. **11:** 425 (March) 1931.
53. Denton, J.: Am. J. Trop. Med. **5:** 173 (March) 1925.
54. Thatcher, H. S.: Pellagra, Arch. Path. **12:** 970 (Dec.) 1931. Thatcher, Sure and Walker (footnote 52).
55. Day, P. L.; Langston, W. C., and O'Brien, C. S.: Am. J. Ophth. **14:** 1005 (Oct.) 1931.
56. Roscoe, Margaret H.: Biochem. J. **24:** 1754, 1930.

Recently we [57] found in our laboratory that there is no relation between the failure in growth and the incidence of pellagra-like symptoms in the rat, the dermatitis being prevalent in some animals that make normal growth, and absent in others that are first stunted in growth for weeks and months, and finally collapse following great losses of body weight. We therefore suggested from this study that the so-called vitamin B_2 (G) is composed of two dietary essentials: one, the deficiency of which produces pellagra-like symptoms in the rat, and another, the deficiency of which produces a decline of growth.

It is difficult to make any comparisons of our observations with those of Roscoe because of the differences in the dietary regimen. Neither are we justified at present in making final conclusions concerning the complexity of vitamin B_2. The work is still in the early experimental stage and needs further evidence of a more quantitative character in order to establish the differentiation clearly. For this reason, it seems to me that a final decision as to nomenclature of the "so-called antipellagric factor" should still be held in abeyance. Indeed, the vitamin B complex seems to be a fountain of vitamins, as is evidenced by the recent works of Williams and Waterman,[58] Hunt,[59] Reader,[60] and Carter, Kinnersley and Peters.[61]

57. Sure, Barnett; Smith, Margaret E., and Kik, M. C.: Science **73**: 242 (Feb. 27) 1931.
58. Williams, R. R., and Waterman, R. E.: Proc. Soc. Exper. Biol. & Med. **25**: 1 (Oct.) 1927; J. Biol. Chem. **78**: 311 (July) 1928.
59. Hunt, C. H.: J. Biol. Chem. **79**: 723 (Oct.) 1928; Hunt, C. H., and Wilder, Willard: Ibid. **90**: 279 (Jan.) 1931.
60. Reader, Vera: Biochem. J. **24**: 77, 1827, 1930.
61. Carter, C. W.; Kinnersley, H. W., and Peters, R. A.: Biochem. J. **24**: 1832, 1930.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.
H. A. CARTER, Secretary.

ACCEPTANCE OF SUNLAMPS

A Preliminary Statement

During the last six years the Council on Physical Therapy has devoted much time and effort to the question of ultraviolet radiation therapy. It has been one of the most complex problems presented to the Council. Because of the restricted number of diseases for which weak ultraviolet radiation is indicated, it was impossible for the Council to evaluate properly ultraviolet radiation therapy until the mass of evidence, for and against, had been investigated. During this period, many unfounded claims for the therapeutic effectiveness of ultraviolet radiation from sunlamps have been recorded in advertisements designed for the attention of the profession and the public.

Investigation requiring extensive study has been made by the Council in collaboration with physicists, numerous specialists in the field, and other scientists acting as consultants for the Council. The result of the work has shown that ultraviolet radiation emitted by "sunlamps" (one class of ultraviolet plus luminous radiators) has a definite but limited therapeutic value. The Council was also confronted with the task of testing the submitted sunlamps emitting these radiations in various degrees of intensity. In an adopted article entitled "Ultraviolet Radiation Useful for Therapeutic Purposes—Specification of Minimum Intensity or Radiant Flux," by Dr. W. W. Coblentz, the Council has definitely specified the types of ultraviolet radiation generators that possess sufficient ultraviolet energy to be of therapeutic value. Furthermore, the Council has drafted two lists of requirements to govern the advertising of ultraviolet generators to the public and the profession.[1]

Sunlamps, so called, are not to be confused with therapeutic ultraviolet generators designed for service in hospitals, clinics and offices of physicians. The therapeutic lamps are comparatively more powerful emitters of ultraviolet energy, while the sunlamps for unsupervised home use are often of low intensity, to avoid injury from overdosage. The term "sunlamp," or a similar name, is understood by the Council on Physical Therapy to mean a lamp that at a specified distance emits ultraviolet radiation not differing essentially from that of the clearest weather, midday, midsummer, midlatitude, sea level, natural sunlight, in total intensity and in spectral range of wavelengths extending from 2,900 to and including 3,130 angstroms and that shall not emit an appreciable amount of ultraviolet of wavelengths less than 2,800 angstroms.

Furthermore, the so-called sunlamp, acceptable to the Council, shall have an erythemogenic efficiency of not less than 20 per cent (on the basis of 22 per cent for Washington noonday June sunlight) and the total ultraviolet in the spectral range of wavelengths 2,900 to and including 3,130 angstroms shall not be less than the erythemogenic equivalent of 20 microwatts per square centimeter of homogeneous radiation of the wavelength (2,967 angstroms) of maximum erythemogenic effectiveness which equivalent is (20 : 0.20 =) 100 microwatts per square centimeter at a thermally comfortable operating distance (say 2½ feet) from the subject irradiated, as specifically defined in the Specification of Minimum Intensity in THE JOURNAL, March 26, page 1082.

From time to time, acceptances or rejections of sunlamps for home use will be published in the columns of the Council on Physical Therapy in THE JOURNAL. In accepting sunlamps, the attention of the profession is called to the following:

A. The Council on Physical Therapy definitely withholds acceptance of the postulatory principle of dual-purpose lighting, because it is highly theoretical and the promulgators of this idea have not presented acceptable clinical evidence to the Council substantiating its therapeutic or prophylactic value.

B. The Council on Physical Therapy declines to accept sunlamps if the manufacturer fails to state in all advertising matter and descriptive literature the distance between the lamp and the recipient required to equal the intensity of midday, midsummer, midlatitude, sea level, natural sunlight. Thus, in the acceptances that follow, the reader will note that the manufacturer has stated the distance the recipient should be from the sunlamp to receive the alleged benefits.

C. The manufacturers of acceptable sunlamps for home use have agreed to discontinue the objectionable claims such as that exposure to ultraviolet rays increases or improves the tone of the tissues or of the body as a whole, stimulates metabolism, acts as a tonic, increases mental activity, maintains health, or tends to prevent colds, because these claims have not been conclusively substantiated by experimental evidence.

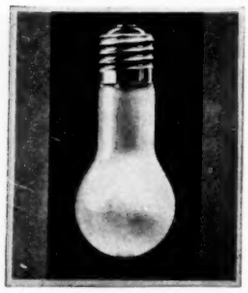
D. The Council declines to sanction claims recorded in descriptive literature and advertising matter in which implication is made that the production of an erythema is unnecessary as a test of intensity; that suberythemal doses are sufficient for therapeutic benefit. The Council believes that, while such statements may be made in good faith, they merely open the way to fraud by irresponsible venders of alleged sources of ultraviolet radiation. Until further evidence is presented to prove otherwise, the Council declares that the erythema test is the only means of determining whether appreciable ultraviolet is emitted by the source.

In order that there can be no misunderstanding on the part of any one relative to the stand of the Council on the acceptance of sunlamps, the dual-purpose lighting and the suberythemal dosage, the aforementioned stipulations are given to the profession that it may better understand the problems confronting the Council regarding ultraviolet radiation therapy. The Council will give careful consideration to clinical evidence scientifically gathered by controlled experiments. This evidence should prove that radiation from sunlamps designed for use without medical supervision has other therapeutic benefits aside from the recognized prophylactic and curative effect on rickets and the assistance in the development of sound bones and teeth.

1. Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession Only and Regulations to Govern Advertising of Ultraviolet Generators to the Public Only.

G. E. MAZDA SUNLIGHT LAMPS, TYPES S-1 AND S-2, ACCEPTABLE

The Mazda Sunlight Lamps come in two sizes, S-1 and S-2. They are manufactured by the General Electric Company, Incandescent Lamp Department, Cleveland. The two lamps differ only in size and they may be described as a combination of a bulb containing two tungsten electrodes that are connected with a tungsten filament, while in the distal end of the bulb is a small pool of mercury. The current first flows only through the filament, but as the temperature increases the mercury vaporizes and an arc is formed between the ends of the tungsten electrodes. The process requires only a few seconds. However, it takes a few minutes for the lamp to begin radiating ultraviolet energy at its maximum efficiency. The mercury arc between the electrodes produces the major portion of the effective ultraviolet radiation. The result of the combination produces radiations in the visible, infra-red, as well as in the ultraviolet zones. The bulb is made of Pyrex glass, which absorbs most of the radiation in the ultraviolet region shorter than 2,800 angstrom units approximately. The Type S-2 lamp is much smaller than the Type S-1.



G. E. Mazda Sunlight Lamp Type S-1.

The Mazda Sunlight Lamps, Types S-1 and S-2, operate only on alternating current and in a specially constructed fixture. If direct current is the only supply available, additional equipment must be purchased at considerable expense. The manufacturer claims that these two lamps are designed to burn for an average period of 300 hours when employed in approved units or fixtures and that suitable adjustments will be made for any defect in manufacture.

The firm claims that "at a distance of thirty inches directly below the bulb of the Mazda Sunlight Lamp, Type S-1, or two feet directly under the Mazda Sunlight Lamp, Type S-2, the ultraviolet effectiveness is about equal to the midday, midsummer, midlatitude, sea level, natural sunlight. Increasing this distance decreases the effect quite rapidly; shortening the distance makes the ultraviolet more intense; when the distance is doubled it takes four times as long to get the same degree of sunburn. At half the distance, only one fourth of the time is required." The Council accepts the aforementioned statement on the basis of the most reliable evidence available. The distance between the lamp and the recipient is merely a close approximation and is subject to later modification when more exact data are available.

G. E. Mazda Sunlight Lamp Type S-2.

The company claims that clinical evidence, which it has submitted to the Council, proves that exposures of children to radiations emitted by the Mazda Sunlight Lamp, Type S-1, were effective in the protection of children against rickets. The Council agrees that if the treatment is given at the aforementioned distance between lamp and recipient the ultraviolet radiation emission is sufficient to be as effective in the prevention and cure of rickets as any other ultraviolet radiation emissions that are comparable to midsummer, midday, midlatitude, sea level, natural sunlight. With the distance between the lamp and recipient definitely indicated, the Council accepts this statement. The Council does not believe that sufficient evidence has been submitted to warrant acceptance of the statement that the Mazda Sunlight Lamps, Types S-1 and S-2, at ceiling distances or more from the recipient with its asserted suberythemal dose, furnishes sufficient ultraviolet radiation to prevent or cure rickets. The Council believes that further study and experimentation are necessary before proof of the value of suberythemal dosage of ultraviolet is sustained.

Based on the evidence that the radiations from the Mazda Sunlight Lamps at the prescribed distances may prevent rickets and promote the development of sound bones and teeth, the Council on Physical Therapy declares the G. E. Mazda Sunlight Lamps, Types S-1 and S-2, acceptable for inclusion in its list of accepted devices for one year.

WESTINGHOUSE MAZDA SUNLIGHT LAMPS, TYPES S-1 AND S-2, ACCEPTABLE

The Westinghouse Mazda Sunlight Lamps, Types S-1 and S-2, are manufactured and sold by the Westinghouse Lamp Company, 150 Broadway, New York City. The two lamps differ only in size, and they may be described as a bulb containing two tungsten electrodes that are connected with a tungsten filament, while in the distal end of the lamp is a small pool of mercury. The current first flows through the filament, but as the temperature increases the mercury vaporizes and an arc is formed between the ends of the tungsten electrodes. It requires only a few seconds for the arc to strike. However, it takes a few minutes for the lamp to begin radiating ultraviolet energy at its maximum efficiency. The mercury arc between the electrodes produces the major portion of the effective ultraviolet radiation. The result of the combination produces radiations in the visible, infra-red, as well as in the ultraviolet zones. The bulb is made of Pyrex glass, which absorbs most of the radiation in the ultraviolet region shorter than 2,800 angstrom units approximately. The Type S-2 lamp is about half the size of the Type S-1.

The Westinghouse Mazda Sunlight Lamps, Type S-1 and Type S-2, operate only on alternating current and in a special fixture. If the direct current is the only supply available, additional equipment must be purchased at considerable expense. The manufacturer claims that these two lamps are designed to burn for an average period of 300 hours when employed in approved units or fixtures and that suitable adjustments will be made for any defect in manufacture.

Westinghouse Mazda Sunlight Lamp Type S-2.

The firm claims that "at a distance of thirty inches directly below the bulb of the Westinghouse Mazda Sunlight Lamp, Type S-1, or two feet directly under the Westinghouse Mazda Sunlight Lamp, S-2, the ultraviolet effectiveness is about equal to the midday, midsummer, midlatitude, sea level, natural sunlight. Increasing this distance decreases the effect quite rapidly; shortening the distance makes the ultraviolet more intense; when the distance is doubled, it takes four times as long to get the same degree of sunburn. At half the distance, only one fourth of the time is required." The Council accepts the aforementioned statement on the basis of the most reliable evidence available. The distance between the lamp and the recipient is merely a close approximation and is subject to later modification when more exact data are available.

The company claims that clinical evidence, which it has submitted to the Council, proves that exposures of children to radiations emitted by the Westinghouse sunlight lamp, Type S-1, were effective in the protection of children against rickets. The Council agrees that if the treatment is given at the aforementioned distance between the lamp and the recipient, the ultraviolet radiation emission is sufficient to be as effective in the prevention and cure of rickets as any other ultraviolet radiation emissions that are comparable to midsummer, midday, midlatitude, sea level, natural sunlight. With the distance between the lamp and the recipient definitely indicated, the Council accepts this statement. The Council does not believe that sufficient evidence has been submitted to warrant acceptance of the statement that the Westinghouse sunlight lamps, Types S-1 and S-2, at ceiling distances or more from the recipient with its asserted suberythemal dose, furnishes sufficient ultraviolet radiation to prevent or cure rickets. The Council believes that further study and experimentation are necessary before proof of the value of suberythemal dosage of ultraviolet is sustained.

Based on the evidence that the radiations from the Westinghouse sunlight lamps at the prescribed distances may prevent rickets and promote the development of sound bones and teeth, the Council on Physical Therapy declares the Westinghouse Mazda Sunlight Lamps, Types S-1 and S-2, acceptable for inclusion in its list of accepted devices for one year.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

SODIUM AMYTAL (See New and Nonofficial Remedies, 1932, p. 91).

The following dosage forms have been accepted:

Ampoule Sodium Amytal, 0.25 Gm. (3¾ grains): Each ampule contains the stated amount of sodium amytal and is accompanied by a 2.5 cc. size ampule of distilled water.

Ampoule Sodium Amytal, 0.5 Gm. (7½ grains): Each ampule contains the stated amount of sodium amytal and is accompanied by a 5 cc. size ampule of distilled water.

Ampoule Sodium Amytal, 1.0 Gm. (15½ grains): Each ampule contains the stated amount of sodium amytal and is accompanied by a 10 cc. size ampule of distilled water.

LUMINAL-SODIUM (See New and Nonofficial Remedies, 1932, p. 85).

The following dosage forms have been accepted:

Ampules Luminal-Sodium (Powder), 5 grains.
Capsules Luminal-Sodium, 5 grains.
Luminal-Sodium Tablets, ¼ grain.
Luminal-Sodium Tablets, ½ grain.

LIVER EXTRACT NO. 343 (See New and Nonofficial Remedies, 1932, p. 248).

The following dosage form has been been accepted:

Liver Extract No. 343, 110 Gm. bottle.

PRELIMINARY REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

"NIRVANOL"

"Nirvanol" (Chemische Fabrik Von Heyden A.-G., Germany: Heyden Chemical Company, New York, distributor) is stated to be phenylethylhydantoin and is marketed in the form of tablets stated to contain 0.3 Gm. of phenylethylhydantoin and in the form of a solution in 4 cc. ampules containing 0.5 Gm. of the sodium salt of phenylethylhydantoin in 4 cc. of water. On request of the Council the American distributor obtained from the German manufacturer a statement of tests proposed for the identification of the product and transmitted it to the Council. The Heyden Chemical Company states that it is supplying the product to physicians and hospitals ordering it but is making no active propaganda for its sale.

The Council took up the consideration of "Nirvanol" at the request of the editor of THE JOURNAL, who asked that a preliminary report be prepared, to be published in the same issue of THE JOURNAL as the paper by T. Duckett Jones and John Lesh Jacobs (The Treatment of Obstinate Chorea with Nirvanol, this issue, p. 18). Nirvanol was introduced as an hypnotic but appears to have fallen into disuse for that purpose because of the rash that is commonly induced. The present report is concerned with its use in the treatment of chorea. It is almost trite to say that early clinical reports of a product are almost invariably more favorable than later reports, and the literature concerning Nirvanol seems to follow the rule. At any rate, Poynton and Schlesinger (*Lancet* **2**:267 [Aug. 10] 1929) write: "A new method of treating chorea with a preparation called nirvanol has recently had a fairly wide trial in Germany. In most clinics where the method has been used it has met with such constant success that it continues to be employed in severe and obstinate cases." In support of this statement they cite the favorable reports of Roeder (1919?), Rietschel, Hester, Husler, Matzdorff (1926), Huber, Schmal (1925) and Keller. They mention only two—Bendix, Buttner—who report that it has no advantage over any other form of treatment of chorea.

Schmal (*Deutsche med. Wchnschr.* **51**:1439 [Aug. 28] 1925) states that Frieda Roeder (1919?) was the first to report on the effect of Nirvanol in chorea. She administered Nirvanol in doses of from 0.3 to 0.45 Gm. during two days to each of two children. One had fever and rash on the ninth day and the other on the twelfth day. The chorea was relieved in one, and the other improved. Schmal treated three cases. The result was brilliant in one case, satisfactory in one, and one failed to improve. He states that the hypnotic action, which may extend even to stupor, is a great disadvantage, but he recommends it especially in severe cases of chorea.

De Rudder (*Klin. Wchnschr.* **5**:1522 [Aug. 13] 1926) states that the therapeutic effect of Nirvanol in chorea depends on the production of Nirvanol sickness—that is, exanthems, eventually fever, with puffiness of the face and mucous membrane, usually within twelve days, and showing a strong analogy to the incubation period of serum disease. He states that there is first an alkalosis, changing suddenly to acidosis, and to the latter he attributes the effects on the central nervous system resulting in temporary increase of choreic movements. He states that the quotient of Ca/inorganic phosphorus in serum sinks until the outbreak of the rash, so that it approaches the condition of a proanaphylactic tetany; that there is a high-grade eosinophilia at the time of the rash. He also mentions other analogies with serum disease and states that Nirvanol probably has the character of an antigen.

Matzdorff (*Deutsche med. Wchnschr.* **52**:528 [March 26] 1926) reports the treatment of two cases of chorea with Nirvanol. The first did very well indeed, but the second showed toxic symptoms, including stupor, without the appearance of rash, somewhat similar to that reported by Schmal. He believes the treatment is suited only for institutions. He states that the literature affords no conclusive evidence of any fatality due to Nirvanol, but that while it is effective it cannot be said to be harmless. Jones and Jacobs state that several deaths possibly, but not certainly, due to the drug have been reported. Matzdorff refers to one of these reports and dismisses the evidence, attributing the death to disease. Poynton and Schlesinger report favorable results with Nirvanol in the treatment of six cases. They state that it is effective, that there is an element of risk in its use, and that it may be considered unjustifiable to take such heroic measures to combat a self-limiting disease. They state, however, that it seems unwise to dismiss Nirvanol summarily on this plea alone. They state that the daily dose of 0.3 Gm. should not be exceeded and that if no rash appears by the fourteenth day, the method is useless and dangerous to proceed with, for which statement they quote Huber. East and Cullinan (*Lancet* **2**:190 [July 26] 1930) report that the rash occurred in only eight of their fifteen cases and that five did well without showing a rash. Twelve improved greatly; one improved moderately, and two showed no response. They state that one cannot foresee the reaction; that the symptoms if not dangerous are sometimes disturbing; that the attack is often cut short dramatically. They believe that the main justification for the use of Nirvanol would rest on a demonstration that abolition of chorea prevents cardiac disease, which remains to be proved; that we do not know that rheumatic infection is abolished, and that the results in two of their cases point to the opposite. They believe that Nirvanol should be used only in those cases which do not improve with ordinary treatment.

Pilcher and Gerstenberger (*Am. J. Dis. Child.* **40**:1239 [Dec.] 1930) report that the majority of children with chorea treated with Nirvanol reacted with fever and morbilliform rash; that following this reaction those with severe chorea usually improved promptly, but that the course of the disease in milder cases, and in those who did not react to the drug by fever or rash, was not appreciably altered, as a rule; (compare East and Cullinan); that the improvement usually occurred about the time the rash appeared, and that the temperature rose to as high as 105.4 F. There was pulmonary complication in one case, renal irritation and other symptoms in another. They call attention to Lengsfeld's report that patients treated with Nirvanol stayed in the hospital for a shorter time than others not treated with it; but Pilcher and Gerstenberger found no shorter stay in the hospital, though they admit that many factors determine this length of stay. They also state that Lengsfeld observed relapse of nine of twenty-three patients within two and a half years. Reichle (*Arch. Int. Med.* **49**:

219 [Feb.] 1932) compares the action of arsphenamine and cinchophen to Nirvanol sensitivity and says that the reaction to cinchophen is probably of the same type, the symptoms being strikingly allergic.

From this review of the literature, it would seem that the following conclusions are justified: (1) that a fairly large percentage of patients suffering with chorea are relieved by Nirvanol; (2) that there is no evidence that the relief of chorea by Nirvanol lessens the tendency to subsequent cardiac disease; (3) that there is no invariable relationship between the appearance of the various symptoms and the therapeutic effects. In other words, the therapeutic action is not the direct effect of any of the side actions, and that the therapeutic effects may occur in the absence of any one of these; (4) that a specific hypersensitiveness to Nirvanol has not been proved; (5) that the side actions are always disagreeable, sometimes alarming, and often positively dangerous, if not even fatal in a small proportion of cases; (6) that the treatment is too severe to justify its use except in those cases that do not yield readily to other treatment; (7) that Nirvanol should not be used in the treatment of chorea except in an institution where the patient is under close supervision.

The Council concluded that the treatment of chorea with "Nirvanol" is in the experimental stage, further investigation being necessary before a final statement of its value can be reached. Without, at this time, examining the claims regarding the identity of the product or considering the acceptability of the proprietary name, the Council voted to postpone action on "Nirvanol" to await the results of further investigation and authorized publication of this report.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

TAR-ME-CINE NOT ACCEPTABLE FOR N. N. R.

Under the uninforming name "Tar-Me-Cine" the Tar-Me-Cine Laboratories, Inc., Waltham, Mass., market a preparation stated to have the following composition: "Chloral Hydrate 8 Drams. Resorcin 8 Drams. Tartaric Acid 10 Drams. 40 Grains. Phenol 10 Drams. 40 Minims. Glycerine 10 Drams. 40 Minims. Menthol 2 Drams. 55.4 Grains. Camphor 2 Drams. 55.4 Grains. Boric Acid 26 Drams. 40 Grains. Alcohol 282 Drams. 40 Minims. A suitable emollient vehicle.—Ad. Q.S. 128 Ounces." This "formula" is incomplete in that the identity of the ingredients which compose the "suitable emollient vehicle" (which may be the really important part of the mixture) is not declared. Furthermore, no statement of composition appears on the label of the preparation other than a declaration of the amount of alcohol and chloral hydrate, as required under the Food and Drugs Act.

According to the label, "Tar-Me-Cine" is "Used in the external treatment of chronic eczema and other skin diseases" and "has been successfully used in the treatment of Infantile Eczema, Poison Ivy, Salt Rheum, Acne and other kindred skin diseases."

As evidence for the usefulness of this complex mixture the Tar-Me-Cine Laboratories, Inc., sent a list of physicians "who have used Tar-Me-Cine, and found it to possess Therapeutic qualities, for the particular affliction for which they used it." Evidence was not presented, however, to indicate that this complex mixture of drugs is therapeutically superior to simpler preparations which physicians may prescribe and to which physicians should give preference in the interest of rational drug therapy.

"Tar-Me-Cine" is unacceptable for New and Nonofficial Remedies because the identity of the "suitable emollient vehicle" is not declared and because the identity and amounts of the potent ingredients are not declared on the label; because the recommendations on the label for use in specific diseases may lead to the ill advised use of the preparation by the laity; because no acceptable evidence is offered for the asserted efficacy of the mixture; because the name of the preparation is not descriptive of its composition, and because it is a complex and unscientific mixture.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

WHITE PEARL EGG NOODLE (FINE) AMERICA'S STANDARD
WHITE PEARL EGG NOODLE (WIDE) AMERICA'S STANDARD

Manufacturer.—Tharinger Macaroni Company, Milwaukee.

Description.—Egg noodles prepared from a mixture of durum patent flour, durum semolina and egg yolk; packed in wax-paper in cartons.

Manufacture.—The flour, semolina and egg yolk in definite proportions and with sufficient water are thoroughly mixed in a dough mixer, kneaded in a kneading machine, and then rolled and cut into noodle strips, which are dried in air currents to approximately 10 per cent moisture content and packed in wax-paper cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	9.7
Ash	1.5
Salt (NaCl)	0.3
Lipoids	5.7
Protein (N × 6.25)	14.7
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	68.2
Lipoid phosphoric acid (P_2O_5)	0.130
Lipoid phosphoric acid (P_2O_5) (dry basis)	0.144
Artificial color	absent

Calories.—3.8 per gram; 108 per ounce.

Claims of Manufacturer.—These noodles are for all table uses for this type of product.

HEINER'S HUGE SLICED BREAD
HEINER'S TWIN LOAF BREAD

Manufacturer.—Heiner's Bakery, Huntington, W. Va.

Description.—A white bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, page 817); prepared from patent flour, water, yeast, a yeast food containing ammonium chloride, calcium sulphate, sodium chloride and potassium persulphate, salt, lard, sucrose and dry skim milk.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	35.9
Ash	0.8
Fat (ether extraction method)	0.9
Protein (N × 6.25)	9.3
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	52.8

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A bread of good quality.

INTERNATIONAL FREE RUNNING SALT

Manufacturer.—International Salt Company, New York.

Description.—A table salt containing 1 per cent added calcium carbonate, which tends to preserve its "free running" quality.

Manufacture.—The salt is obtained by evaporation of salt brine made from rock salt deposits in the earth. Surface water is forced down into the rock salt deposits through deep wells. The brine so formed is pumped to the surface, treated with calcium hydroxide for purification, and stored in tanks to permit insoluble matter to settle out. The resultant clear brine, free from all precipitated matter, is conveyed to the evaporators. Two methods of evaporation are used: the "grainer," or open pan type, and the "vacuum," or closed pan type.

By the open pan evaporator method the brine is evaporated in long shallow tanks equipped with steam coils. As the water is evaporated, salt crystals form, settle to the bottom and are removed at regular intervals by mechanical raking devices. The size of the crystals depends on the speed of evaporation of the salt brine. The salt crystals are washed, freed from the brine by filtration, and kiln dried by passing through rotating heated dryers. The dried salt is screened to separate it into various sized grains. Salt of a definite and uniform granulation is admixed with 1 per cent calcium carbonate and automatically packed in paper cartons.

In the "vacuum" method, the brine is heated and evaporated under reduced pressure in closed vessels. The salt grains in the "vacuum" pans are perfect cubes: those in the open pans are flatter and are called "snowflake" salt.

Analysis (submitted by manufacturer).—

	per cent
Water insoluble material	0.00
Iron oxide (Fe_2O_3)	absent
Barium salts	absent
Calcium chloride ($CaCl_2$)	absent
Calcium sulphate ($CaSo_4$)	0.44
Magnesium chloride ($MgCl_2$)	0.06
Sodium chloride (NaCl)	98.50
Calcium carbonate (added) ($CaCO_3$)	1.00

Claims of Manufacturer.—International Free Running Salt is for all table uses of salt. The added calcium carbonate tends to preserve the "free running" qualities.

ASCO EVAPORATED MILK
FARMDALE BRAND EVAPORATED MILK

Manufacturer.—American Stores Dairy Company, Dundee, Ill.

Description.—An unsweetened, sterilized evaporated milk.

Manufacture.—Only strictly sweet fresh milk of healthy herds and from sanitary farms regularly inspected by the company is used. On arrival at the plant, the milk is tested for flavor and acidity; milk of more than 0.18 per cent lactic acid is rejected. The milk is brought to a temperature of from 95 to 100 C., is concentrated in "vacuum pans" at 55 C. to a definite specific gravity, and homogenized by being forced through small apertures, which disperses the fat in fine globules which later will not separate out. The homogenized milk is standardized under laboratory supervision to conform to the United States Department of Agriculture standard for evaporated milk and automatically filled into cans through small openings which are automatically sealed. The sealed filled cans are brought to 100 C. and processed in a pressure cooker at 115 C. for fifteen minutes, after which they are quickly cooled.

The factory is maintained in a strictly sanitary condition. The equipment is cleaned daily with brushes and washing solution.

Analysis.—

	per cent
Moisture	73.8
Total solids	26.2
Ash	1.5
Fat	7.8
Protein (N × 6.38)	6.9
Lactose (by difference)	10.0

Calories.—1.4 per gram; 40 per ounce.

Micro-Organisms.—The product is sterile.

Claims of Manufacturer.—These brands of evaporated milk are for general baking, cooking and table purposes and for infant feeding. The mixture of equal parts of the evaporated milk and water is not below the legal standard for whole milk. The curds formed in the stomach are smaller, softer and more readily digestible than those from raw or pasteurized milk.

YACHT CLUB BRAND CORN SYRUP WITH CANE FLAVOR

(85 Per Cent Corn Syrup, 15 Per Cent Refiners' Syrup)

Packer.—D. B. Scully Syrup Company, Chicago.

Distributor.—Bemis, Hooper, Hays Company, Oshkosh, Wis.

Description.—A table syrup; a corn syrup base (85 per cent) with refiners' syrup (15 per cent).

Manufacture, Analysis, Calories and Claims of Manufacturer.—See these sections for Banner Blue Golden Syrup with Cane Flavor (THE JOURNAL, March 5, 1932, p. 817).

TRIPLE AAA BRAND PURE TOMATO JUICE

Manufacturer.—American Packing Corporation, Evansville, Ind. A wholly owned subsidiary of the Loudon Packing Company of Terre Haute, Ind.

Description.—Canned tomato juice; retains in large measure the vitamin content of the raw juice used. Contains a small amount of added salt.

Manufacture, Analysis, Calories, Vitamins and Comments.—See these sections for Loudon Brand Tomato Juice (THE JOURNAL, June 25, 1932, p. 2289).

KRE-MEL DESSERT (COFFEE FLAVOR)

A Mixture of Sugar (Dextrose and Sucrose), Corn Starch, Pure Coffee, Vanillin

Manufacturer.—Corn Products Refining Company, New York.

Description.—Mixture of dextrose, corn starch, sucrose; flavored with vanillin and coffee.

Analysis (submitted by manufacturer).—

	per cent
Moisture	7.0
Ash	1.2
Fat (ether extract)	1.1
Protein (N × 6.25)	1.1
*Dextrose	45.0
*Sucrose	20.0
*Starch	24.5
Caffeine less than	0.1
Crude fiber	0.0
Titratable acidity as HCl	0.03
Vanillin flavor	present

* Estimated from formula.

Calories.—3.7 per gram; 105 per ounce.

Claims of Manufacturer.—A dessert powder for the simple preparation of table desserts.

PORTOLA FILET OF SARDINES

(In Pure Olive Oil)

Manufacturer.—K. Hovden Company, Monterey, Calif.

Description.—Cooked, boneless, smoked Pilchard sardines (Clupea caeruleus, blue sardines) packed in olive oil in tins.

Manufacture.—Pilchard sardines harvested as described for the Portola Sardines (Pilchards) (THE JOURNAL, June 4, 1932, p. 1991) are used. As soon as the fish enter the plant, slices are cut off the body so as to eliminate the ribs and backbone. The meat slices are placed in wire baskets, submerged in a weak brine for fifteen minutes to extract the blood, dried, and smoked on wire trays from four to six hours. They are packed in cans and are steamed for four minutes standing upright and for ten minutes turned over to permit the draining off of excess water and oil. Olive oil is added and the cans are sealed and processed under the control of the California State Board of Health as to temperature and time.

Analysis, Calories and Claims of Manufacturer.—See these sections for Portola Sardines (Pilchards).

HELMS OLYMPIC WHEAT BREAD SLICED

(White and Whole Wheat Flours)

Manufacturer.—Helms Bakeries, Ltd., Los Angeles.

Description.—A bread prepared from white and whole wheat flours by the straight dough method (method described in THE JOURNAL, March 18, 1932, page 889); prepared from a mixture of white and whole wheat flours, yeast, a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, sweetened condensed skim milk, salt, lard, sucrose, invert sugar and water.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	34.0
Ash	2.0
Fat (Polenske-Grujic method, Leach, "Food Inspection and Analysis," ed. 4, p. 343)	2.6
Protein (N × 6.25)	11.2
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	49.4

Calories.—2.7 per gram; 77 per ounce.

Claims of Manufacturer.—A good quality bread prepared from white and whole wheat flours.

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SATURDAY, JULY 2, 1932

DIET AND HUMAN MILK NUTRIENTS

Recent studies in the growth and development of the child have emphasized anew the importance of having fuller knowledge of the physiologic rôle of the mother during the days of dependence of her baby. Indeed, few scientific problems in relation to maternal nutrition are of greater significance than those relating to the diet of the mother during the reproductive cycle and its subsequent effect on both mother and child. The knowledge that proper prenatal care and adequate maternal diet are effective factors in the postnatal development of the child shows the necessity of close cooperation between the obstetrician and the pediatrician.

THE JOURNAL [1] has emphasized that the human mother is subject to the influence of her own diet, which may be reflected to some extent in the composition of her milk. Shukers, Macy, Donelson, Nims and Hunscher [2] point out that it is acknowledged generally that the proper kind and amount of food are essential to the mother during pregnancy and lactation if she is to maintain good health and at the same time nourish her baby properly before and after birth. Medical literature is, nevertheless, practically barren of any extended studies on the effect of diet on human reproduction, and the feeding of women during this crucial period still remains largely empirical. In another report [3] these authors have reemphasized the fact that experimental work to demonstrate the precursors of milk constituents and factors determining the metabolic requirements for lactation has been done chiefly on mammals other than man and especially on the cow and the goat. Though the results with these animals are significant in indicating the general relationships, they cannot be expected to show the specific demands of woman. There is a possibility that the digestive processes of the ruminant and of man, as well as the synthetic capacity, may differ.

Extensive and timely studies on maternal nutrition are being carried forward on women in the Research Laboratory of the Children's Fund of Michigan, in Detroit, under the direction of Dr. Icie G. Macy. It has been observed that lactation increases the food demands approximately 60 per cent over and above those of pregnancy. The self chosen diets and the nutritive requirements of three women during sixty weeks of intensive lactation have been observed with especial reference to the intake of calories, proteins, fat, carbohydrate, calcium and phosphorus in the food and the outgo of these substances in the milk secreted. These women produced daily an average of 1,419, 2,366 and 3,134 cc. of milk. Since current regimens recommended for lactating women are empirical, it seems pertinent to consider the quantity of nutrients actually utilized in the secretion of such quantities of milk. When the necessary ingredients for milk synthesis are lacking in the daily food, the mother may decrease her milk output, secrete milk deficient in these constituents, or draw them from her own tissues. A marked deficiency of dietary proteins, fat or carbohydrate is usually associated with a prompt drop in milk volume; inadequate vitamin may result in a vitamin-deficient milk; while an insufficient mineral intake results in a drain on the maternal reserves. The Children's Fund investigators further state that intensive lactation is often marked by negative calcium and phosphorus balances but that there is obviously a limit to the amount of material a woman can lose from her tissues without some impairment of her body and a diminution in the nutritive value of her milk.

Macy and her co-workers point out that, under ordinary conditions, milk volume is the chief determinant of the total output of milk calories; therefore milk volume becomes a factor of moment in planning diets for lactating women. The food fuel of breast milk is derived from the cleavage products of the fats, carbohydrates and proteins of either ingested food or maternal tissue. The Detroit investigators show that women who ingested daily dietaries whose percentage distribution of calories between proteins, fats and carbohydrates was in the ratio of 15:37:48 and with caloric values of 4,300, 4,600 and 3,800 secreted milk containing 2,100, 1,500 and 1,120 calories, respectively; thus there were left approximately 2,000, 3,000 and 2,600 calories daily for maintenance, provided the human mother is 90 per cent efficient in the transformation of food energy into milk energy. These observations are in accord with the advice given by Rose,[4] who suggests that in planning a dietary for the lactating woman an allowance equal to 10 per cent of the caloric output in milk should be made for the

1. Diet and the Production of Human Milk, editorial, J. A. M. A. **98**: 739 (Feb. 27) 1932.

2. Shukers, Carroll F.; Macy, Icie G.; Donelson, Eva; Nims, Betty, and Hunscher, Helen A.: Food Intake in Pregnancy, Lactation, and Reproductive Rest in the Human Mother, J. Nutrition **4**: 399 (Sept.) 1931.

3. Shukers, Carroll F.; Macy, Icie G.; Donelson, Eva; Nims, Betty, and Hunscher, Helen A.: A Quantitative Study of the Maternal Dietary with Respect to the Nutrients Secreted into Breast Milk, J. Nutrition **5**: 127 (March) 1932.

4. Rose, Mary S.: Feeding the Family, ed. 3, New York, Macmillan Company, 1929.

dissipation of energy in the physiologic processes of milk secretion. They are not, however in agreement with those who follow the dictum of practices indicated in the dairy industry, and advise an extremely generous supply of two food calories for each breast milk calory beyond maintenance requirements. Calory overfeeding has not been demonstrated to be advantageous either to the cow or to woman and differences in species such as exist between the ruminant cow and woman have to be considered in the physiologic utilization of food calories in the secretion of milk and in the appraisal of lactation requirements.

Hoobler [5] has demonstrated that the provision of an adequate protein intake during lactation is important since it has been shown that milk protein is ultimately derived from food protein and that the level of dietary protein affects the quantity of milk secreted and, within limits, its composition. The milk proteins are derived from the free amino-acids of the blood. Macy and her associates point out that the quantity and quality of the amino-acids in the circulating blood are changed by diet, by the varying nitrogen demand of the tissues, and by the supply of nonprotein calories. These changes have a marked influence on milk secretion. In the words of the authors, "because of the multiplicity of determinate influences it becomes difficult to set a physiological minimum for any body function and, indeed, it is impossible to state a quantitative protein requirement for complicated physiological functions such as those involved in lactation superimposed on maintenance."

One cannot review these studies on maternal nutrition without being impressed with the urgent need for more comprehensive observations on women and a closer scrutiny of the present empirical dietary standards for human reproduction. The importance of the problem justifies a more thorough study of the nutritional needs of women.

5. Hoobler, B. R.: The Effect on Human Milk Production of Diets Containing Various Forms and Quantities of Protein, Am. J. Dis. Child. 14: 105 (Aug.) 1917.

THE MEASUREMENT OF PHYSICAL GROWTH

One naturally thinks of the observation and measurements of a large number of persons at different ages and under different conditions as a simple way of securing useful information regarding growth. The investigator in this field is at once confronted with a practical difficulty in deciding how the crucial measurements shall be made. The procedure that promptly suggests itself, of securing data on the body weight, is far from a satisfactory way of estimating changes in size or development. There are changes in stature, muscular development, body proportions and so on that may be quite as significant as gains in weight; indeed, they may occur independent of the body weight. If there is such a condition as a "normal build" of the body, it may betray itself only by measurements that are not necessarily related to the weight. Consequently, attempts have been made to introduce other estimates into the study of growth. Height and girth have been measured. "Sitting height" was used by Pirquet to establish his "index of nutrition," or body build.

Zook [1] has pointed out that physical growth presents two aspects, the external and the internal. The external aspect is recognized as an increase in size or volume. The internal aspect consists in the many vital changes taking place within the body, such as the increase in the size of the heart and arteries and the percentage of muscle and bone. He argues that, since the human body and its segments are three dimensional, methods of measurement must be adopted which express the relations of these segments in units of volume. Accordingly, Zook has devised a method, at the University of Chicago, based on the time-honored principle of Archimedes: "The volume of water displaced by a body submerged is equal to the volume of the body," which is self evident. The ingenious apparatus of Zook records the volume not only of the body as a whole but also of its segments. Detailed measurements were thereby made on a large number of boys from 5 to 19 years of age, so that norms for each age group were secured. By measuring a well nourished group from the Laboratory Schools and a poorly nourished group from the University Settlement, it was possible to point out detailed differences in the groups. The cranium and the foot are the only segments that are practically equal in volume in the settlement and university groups. These segments are a larger percentage of the total body in the settlement group than in the university group. The settlement group is much lower than the university group in volume of all other segments, the greatest difference being found in the trunk. In these segments the two groups are about equal when the volume of these segments has been reduced to the percentage of the total volume. The use of his new method has enabled Zook to show the growth lag in late childhood and the adolescent spurt that follows for the body as a whole and for all the segments with the exception of the cranium and the foot. Of the three major segments, the leg is first to reach the low level and start the adolescent spurt at about 10 years of age, increasing to 12 and remaining high until after 16. The head segment begins its increase at about 11 years of age, increasing to 13 and dropping rapidly thereafter. The trunk begins its increase at about 12 and continues to increase until about 16; then it drops rapidly.

The significance of this new mode of examination is evaluated by its author as follows: It opens up an entirely new field by presenting a new method of studying physical growth. It makes possible the location of lags and spurts in growth for each of the segments

1. Zook, D. E.: The Physical Growth of Boys, Am. J. Dis. Child. 43: 1347 (May) 1932.

in an individual or for a whole group. The chief value of the method will probably come when measurements have been made on the same subjects throughout their periods of growth. Although the method is of unquestionable value as a research device in physical growth, Zook believes it to be of great usefulness in school health work and other fields of education, such as swimming instruction. The measurement can be completed in about eight minutes. A comparison of the graphs made on the same subject at different times will show where and how extensive have been the changes in volume between the time of the two measurements. The study is significant also, Zook adds, in that it has shown the invalidity of formulas for body volume. Since the present method gives body volume accurately, any further need of such formulas is entirely eliminated. The specific gravity of the whole body should be significant to swimming instructors in locating natural difficulties in learning to swim. It may also have contributions to make in locating the onset of puberty or other physical changes.

It is not generally known that during the World War Bean,[2] working with the American Red Cross to provide more balanced artificial limbs for disabled soldiers, used water displacement to obtain the volume of the artificial limb by submerging the corresponding whole limb in water and measuring the water displaced. The specific gravity was determined, approximately, by finding the specific gravity of the limb that had been amputated. Thus having the desired volume and the specific gravity, an artificial limb could be made the same size and weight as the corresponding whole limb, restoring the symmetry and balance of the whole body as they were before the loss of the limb.

TILTON FOUND GUILTY

On June 16, Lester Tilton, notorious and aggressive promoter of a nostrum for cancer, was found guilty of conspiracy to violate the medical practice act of the state of Illinois. Similar verdicts were also brought by the jury against two co-defendants who aided Tilton in his quackery—Harry de Joannis, a promoter, and Joseph Duffy, a licensed physician. Tilton and de Joannis face a penitentiary term of from one to five years and the payment of a fine of $2,000. The jury recommended that some leniency be shown Duffy because of his comparative youth—a term of one day to one year in the county jail.

Tilton's activities have long been a stench and a disgrace to the Middle West. Originally from Clinton, Iowa, Tilton came, a year or two ago, to Chicago, doubtless deciding that Illinois offered a lush field. With the personnel that composed the Department of Registration and Education of the State of Illinois some years ago, Tilton's judgment might have been good. Fortunately for the public health, there was a change in this personnel; more recently, aggressive action has been taken by that department against those who are violating the medical practice act of the state of Illinois.

Tilton's "cancer cure," like practically every other humbug of the type, is an escharotic with a zinc salt as the active ingredient in a base of peat as the "mystery" element. Tilton's fake was dealt with by the Bureau of Investigation in an article that appeared in The Journal, June 7, 1930, and his methods and activities were described in detail at that time. Tilton has always worked the religious angle and has been particularly successful in interesting well meaning but technically untrained members of the Roman Catholic Church in supporting his schemes. At the time of The Journal's previous article, it was brought out that Tilton had worked through the nuns of an order in Wisconsin. More recently Tilton, with the aid of promoter de Joannis, was able to interest the nuns of the Felician Order in Chicago. The newspaper reports of the trial just completed brought out that they took in at the so-called clinic operated at the Felician convent, in the thirteen months of its operation, about $19,000, of which about $6,000 was paid to Tilton. Tilton testified that he had placed the "formulas" for his nostrum in escrow with a trust company to be turned over to the Felician nuns on his death. It was further disclosed in the course of the trial that Tilton and de Joannis had launched a scheme to incorporate the treatment for a million dollars, but this fell through following an investigation of the nostrum.

So rank did the scandal of the operation of this fake cancer cure in a nunnery become that Cardinal Mundelein requested his personal physician, Dr. Louis D. Moorhead, head of the medical committee of the Catholic archdiocese of Chicago and dean of the department of surgery at Loyola, to head a committee of physicians to investigate the convent clinic. Following this investigation, the cardinal ordered the clinic closed.

The testimony during the trial bore a striking resemblance to the testimony given at the Baker "cancer cure" libel suit of some weeks ago. In fact, the story of all such "cancer cure" fakes has a ghastly sameness. People with superficial benign growths or blemishes, which they believe to be cancer, go to these fakers; the blemishes are diagnosed cancer and are eaten out with escharotics; the victims suffer excruciatingly while it is being done but finally go home disfigured but, of course, healthy—for they had never been anything else. The poor sufferers from what is really cancer, many of whom have impoverished themselves or their loved ones to take the fake treatment, end up in the graveyard.

Owing to the complexities of American jurisprudence, which on occasion seems peculiarly to favor the manipulations of the criminal and to penalize the public, it is by no means certain as yet that Tilton will serve the sentence that has been pronounced. Nevertheless the state of Illinois is to be congratulated on the valiant

2. This information was derived from the review by Zook.

fight it has made to protect its citizens against this heartless form of quackery. Particular credit belongs to Assistant State's Attorney Charles A. Bellows and to Judd E. Edwards, chief inspector of the Department of Registration and Education of the State of Illinois, for the work they have done in this case against unbelievable difficulties and malignant influences. Drs. Max Cutler, Francis Carter Wood, James P. Simonds, and other physicians deserve appreciation for giving of their time and effort to aid the state in this work.

Current Comment

RECIPROCAL IMMUNOLOGIC RELATIONSHIPS

The apparently spontaneous appearance of antipneumococcus immunity in growing rats is the latest form of Friedberger's "maturation panimmunity" to be challenged by American investigators. Dr. Victor Ross [1] of the department of health of New York City found that mice and young rats are nearly equal in susceptibility to experimental inoculation with pneumococci but that adult rats, grown with no known contact with these micro-organisms, may in extreme cases resist a million times the youthful minimum lethal dose for this animal species. This apparently normal adult immunity to pneumococcus, however, is not the same for all types of this infection. It appears earliest and is most effective against type II pneumococcus, is less prompt in its appearance and much less effective against type III, and is not demonstrable with type I. Dr. Ross interprets his observation as evidence of the presence in the normal intestinal tract of rats of saprophytic microorganisms antigenically related to the type II and type III pneumococcus. In support of this hypothesis he quotes Sugg and Neill's [2] demonstration of the reciprocal immunologic relationship between type II pneumococcus and certain yeasts (Saccharomyces cerevisiae), and Avery, Heidelberger and Goebel's [3] demonstration of a potentially antigenic polysaccharide common to type II pneumococcus and the Friedländer bacillus. While at present Dr. Ross's theory of reciprocal environmental immunization must be regarded as little more than a plausible explanation of his results, his theory is nevertheless in line with the current tendency to seek other than specific infectious factors to account for adult immunity to poliomyelitis, scarlet fever, diphtheria, tuberculosis and certain other specific infections. Zozaya's [4] description of a common antigenic factor in meningococcus and certain putrefactive bacteria, and the subantigenic lipoids [5] now known to be common to certain pathogenic bacteria and certain animal tissues which may serve as food, are other examples of the newer knowledge of such conceivably important heterophile relationships.

1. Ross, Victor: J. Exper. Med. **54**: 875 (Dec.) 1931.
2. Sugg, J. Y., and Neill. J. M.: J. Exper. Med. **49**: 183 (Feb.) 1929. Sugg, J. Y.; Richardson, L. V., and Neill, J. M.: Ibid. **50**: 579 (Nov.) 1929.
3. Avery, O. T.; Heidelberger, M., and Goebel, W. F.: J. Exper. Med. **42**: 709 (Nov.) 1925.
4. Zozaya, J.: J. Exper. Med. **54**: 725 (Nov.) 1931.
5. Organ-Specific Lipoids, editorial, J. A. M. A. **97**: 1628 (Nov. 28) 1931.

N. A. COBB, NEMATOLOGY AND MEDICINE

Probably few persons, well informed in the subject, will deny that Dr. N. A. Cobb of the U. S. Department of Agriculture, whose death has just occurred, was the leading specialist of this country and perhaps of the world in the zoological group known somewhat incorrectly as the "free-living nematodes." It has been estimated that by their infestation of live stock the nematodes cause a loss of one hundred million dollars annually. In his address before the American Society of Parasitologists in January, 1931, and in subsequent papers, Cobb castigated his zoological colleagues for their lack of interest in the nemas and he flayed the authors of textbooks for not keeping up to the times in laying before their audiences the enticing anatomic and biologic details of his specialty. The question arises whether a correspondingly brilliant specialist in mammalogy, ornithology, ichthyology or many other zoological "ologies" could not present equally valid arguments for his field. College and high school zoology resemble the changing "fashions." Zoological trends are established by the professors of certain universities which by more or less general consent are accepted as centers for training teachers, and the zoological tendencies of these professors radiate through their graduates to the colleges and high schools. Had Cobb, with his inspiring enthusiasm, been head professor of zoology at any one of, say, ten leading universities, nematology would become more fashionable than it is today in college and high school courses. Unfortunately, the field is so large that the teacher of beginners can select only a small portion of the vast field of zoology to pass on to his pupils. The "survey" courses in general biology and general zoology can touch only a few of the high spots of the subject. Much the same situations exist in medicine. It is not unnatural that the average instructor follows the path of least resistance and is influenced more by what he has been taught than by what is published in the recent special journals. Cobb's argument in reference to nemas versus echinoderms seems, from the medical sidelines, well founded. His address was in reality another protest against the intellectual miser who seeks knowledge for the sake of knowledge instead of for the good it will do.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 10:45 to 10:50 a. m. over Station WBBM (770 kilocycles, or 389.4 meters). The Columbia chain program has been discontinued for the present.

The program for the week is as follows:

July 4. Holiday; no broadcast.
July 6. Keeping the Baby Well.

There is also a fifteen minute health talk sponsored by the Association on Saturday morning from 10:45 to 11 over Station WBBM, Chicago.

The program for the week is as follows:

July 9. What Is Acidosis?

This schedule is based on Chicago Daylight Saving Time, one hour faster than Central Standard Time.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Portrait of Dr. Robertson.—The Barbour County Medical Society was presented with a portrait of the late Dr. James W. Robertson, Clayton, June 7. Dr. Robertson was president of the society from 1926 to 1928. Dr. George O. Wallace, Bakerhill, presented the portrait, and Dr. James Reid, Clayton, president of the society, presided. The speaker was Dr. Thurston A. Warren, Clayton.

Society News.—At the meeting of the Northeastern Division of the Alabama State Medical Association, June 3, at Scottsboro, the speakers included Drs. Amos C. Gipson, Gadsden, on "Cultivating the Child's Appetite"; Edwin V. Caldwell, Huntsville, "Diagnosis and Treatment of Fractures of the Pelvis"; German P. Haymore, Chattanooga, Tenn., "Subacute Bacterial Endocarditis"; Seale Harris, Birmingham, "Epilepsy, Associated with Hyperinsulinism: Its Control by Diet," and Marion R. Moorman, Huntsville, "Otomycosis." Dr. Hugh Boyd, Scottsboro, president of the Jackson County Medical Society, presented a case report on Rocky Mountain spotted fever.

CALIFORNIA

Immunization Programs.—Nine physicians of Placer County, cooperating with the county health officer and the state department of health, recently provided immunization against diphtheria to 1,237 children in one week. In Madera County, 2,000 children have been vaccinated against smallpox since March 23. Madera County is sparsely settled and the schools are widely separated.

State Medical Meeting.—Dr. Joseph M. King, Los Angeles, was installed as president of the California Medical Association at its recent annual meeting in Pasadena. Dr. George G. Reinle, Oakland, was made president-elect, and Dr. Emma W. Pope, San Francisco, reelected secretary. Del Monte was chosen as the place for the next annual session, April 24-27, 1933, with headquarters at the Del Monte Hotel. Speakers at the recent meeting included Drs. Samuel A. Levine, Boston, on "Clinical Aspects of Coronary Disease"; Fred H. Albee, New York, "Treatment of Fracture of the Hip"; George K. Rhodes, San Francisco, and Donald C. Collins, Rochester, Minn., "Perforated Peptic Ulcer"; Karl A. Menninger, Kansas City, "Psychoanalytic Aspects of Suicide"; Harvey T. Olsan, Los Angeles, "Syphilitic Pneumonia"; Albert L. Chaney, Ph.D., Los Angeles, "Purity of Nitrous Oxide—with Especial Reference to Nitrogen Content"; John F. Kessel, Ph.D., Los Angeles, "Bacillary Dysentery—Laboratory Observations and Bacteriophage Therapy"; Karl F. Meyer, Ph.D., San Francisco, "Principles of Prophylaxis Against Typhoid Fever, Whooping Cough, Scarlet Fever and Smallpox," and Daniel Beecher, deputy district attorney, Los Angeles, "The Physician as an Expert Witness—His Qualifications, Duties and Limitations, with Suggestions for Relief of Present Status of Expert Witnesses." A special exhibition included sixty-one books and manuscripts relating to medical knowledge in Tudor England.

COLORADO

Survey of Housing Conditions.—With a reduction in infant and maternal mortality as one of its objectives, a survey of housing conditions in the so-called slum districts of Denver was made in August, 1931. When the compilation of data was complete, the building inspectors were requested to pass on buildings that were not considered habitable. Condemnation proceedings then were instituted. Fifty-seven houses, eleven stores and five garages were among the buildings demolished. The wrecking was done by the city at no expense to the owner. In many cases it was necessary to arrange for the housing of the occupants at city expense. When it was possible to place property in habitable condition, a definite time limit was set for the improvement. Among the five districts surveyed, the highest infant mortality rate found was 250 per thousand live births. Although the statistical study has not been completed, efforts thus far have been directed to showing the advisability of demolishing the so-called slum district.

DISTRICT OF COLUMBIA

Society News.—The Medical Society of the District of Columbia has authorized its committee on civic health to provide volunteer physicians to aid in a temporary clinic at the so-called Bonus Army camp. Dr. Donald S. Knowlton is director of the clinic. The action was taken as a measure to protect public health.

Hospital Discontinues Undergraduate School.—The board of directors of the Children's Hospital, Washington, put into effect, April 1, a new plan which stops the admission of new students in its training school and which accepts only graduate and affiliate students for nursing service. Students already in the school will be graduated on satisfactory completion of their course.

ILLINOIS

Fifty Years of Practice.—An open-air dinner was given by the Randolph County Medical Society, June 17, in honor of Drs. James W. Weir, Sparta, and William A. James, Chester, to celebrate their completion of fifty years in the practice of medicine. Speakers included Dr. William K. McIntyre, St. Louis, on "Pruritus Ani."

Society News.—A symposium on cancer was conducted before the La Salle County Medical Society in Ottawa, June 21, by Drs. Peter A. Nelson, Jr., Joseph E. F. Laibe and Herbert E. Schmitz, all of Chicago.——Dr. Samuel M. Feinberg, Chicago, addressed the Carroll County Medical Society at Savanna, June 17, on "Respiratory Allergy."

Chicago

Society News.—The officers of the Chicago Academy of Criminology for the coming year are: president, Edwin H. Sutherland, Ph.D., department of sociology, University of Chicago; vice presidents, Dr. Ludvig Hektoen, director, John McCormick Institute for Infectious Diseases; Dr. Paul L. Schroeder, director, Institute for Juvenile Research, and Arthur J. Todd, Ph.D., department of sociology, Northwestern University, and secretary, Dr. Meyer Solomon, department of neurology, Northwestern University Medical School.

Portrait of Dr. Bensley.—Presentation of a portrait of Dr. Robert R. Bensley was made to the University of Chicago, June 14, when a group of Dr. Bensley's students, colleagues and other friends gathered at a dinner given in his honor. Dr. Bensley is professor of anatomy in the Division of Biological Sciences at the university and has been a member of the department since 1901. The speakers included Dr. Gotthelf Carl Huber, professor of anatomy, University of Michigan Medical School, Ann Arbor, who spoke on behalf of the science of anatomy; Julius Stieglitz, Ph.D., chairman, department of chemistry, representing the faculty of the university, and Charles Judson Herrick, Sc.D. Richard E. Scammon, Ph.D., formerly dean of the division and now professor of anatomy at the University of Minnesota, was among the guests. The portrait was painted by Mr. Edmund Giesbert of the art department of the University of Chicago.

Maxwell Street Dispensary Under New Plan.—Beginning July 1, the Maxwell Street Dispensary of the Chicago Lying-In Hospital will be operated as a neighborhood maternity clinic, for a period of ten years. The dispensary will be known as the Chicago Maternity Center, and the lying-in hospital will continue to work in affiliation with it. The hospital had its beginning in the dispensary thirty-seven years ago, when Dr. Joseph B. De Lee, who is in charge of the hospital, founded it in four rooms of a tenement at Maxwell Street and Newberry Avenue. Since then the dispensary work has been carried on continuously. Hospital care is provided for homeless expectant mothers, but most of the work of the staff is done in the homes of the poor. Free nursing and medical service are furnished. The change in management was necessary because of lack of funds. As the closing of the institution would deprive women of the district of the proper care, it is hoped that sufficient funds will be procured to assure its continued operation. Dr. De Lee will continue as chief of the consulting staff.

Society for Personality Study.—Dr. Meyer Solomon, associate in neurology, Northwestern University Medical School, was elected president of the Chicago Society for Personality Study, organized May 25. Other officers elected are Ernest W. Burgess, Ph.D., professor of sociology, University of Chicago, vice president, and Dr. Paul L. Schroeder, professor and head of the department of criminology, University of Illinois College of Medicine, secretary. Charter members of the society include Harvey Carr, Ph.D., professor of psychology, University of Chicago; Dr. John Favill, associate clinical pro-

fessor of neurology, Rush Medical College, and Robert H. Gault, Ph.D., professor of psychology, Northwestern University. It is the intention of the society to study human behavior and personality from all angles. Monthly meetings will bring together psychiatrists, psychologists, sociologists, anthropologists, educators, physiologists, biochemists, political scientists, criminologists and others concerned with advancement of the knowledge of personality. Problems to be studied will comprehend family situations, incompatibility, delinquency, the alcohol and drug habits, cerebral fatigue, constitutional make-up, and others. Membership will be limited to 100.

INDIANA

Dr. Barnhill Honored.—Resolutions of appreciation and a gold watch were presented to Dr. John F. Barnhill, Miami Beach, Fla., at the close of a graduate course on the eye, ear, nose and throat, which he conducted at Indiana University School of Medicine recently with the assistance of members of the faculty. Dr. Barnhill has been professor of surgery of the head at Indiana University School of Medicine for many years. He was secretary of the Section on the Eye and Ear of the American Medical Association from 1901 to 1903, and chairman in 1904.

Dr. Gatch Appointed Dean of Indiana University.—Dr. Willis D. Gatch, professor of surgery in the Indiana University School of Medicine, Indianapolis, since 1911, has been appointed dean of the school to succeed Dr. Charles P. Emerson. Dr. Gatch has been acting dean of the school since Dr. Emerson's departure last fall to engage in the inspection of missions in the Far East on behalf of the Rockefeller Foundation. He was graduated from Indiana University in 1901 and received his degree of doctor of medicine from Johns Hopkins University School of Medicine in 1907. Dr. Emerson, who will return soon, has been elected research professor in the medical school. He has been professor of medicine and dean of the school since 1911.

LOUISIANA

Bill Introduced.—H. 737 proposes to prohibit the issuance of marriage licenses unless both parties to the proposed marriages present certificates from a coroner stating that they are free from syphilis. It is to be the duty of coroners to take samples of blood from both parties to the proposed marriages and to mail such samples to the state board of health for Wassermann tests. If the reactions to the tests are negative, coroners are to issue medical certificates, which authorize the proper officials to issue marriage licenses.

Health at New Orleans.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended June 18, indicate that the highest mortality rate (15) appears for New Orleans and the rate for the group of cities as a whole, 10.1. The mortality rate for the corresponding period last year for New Orleans was 14.1 and for the group of cities, 10.5. The annual rate for eighty-five cities for the twenty-four weeks of 1932 was 12.1, as against a rate of 13 for the corresponding period of 1931. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

MARYLAND

Lectures for Midwives.—Lectures for midwives and applicants for licenses to practice the profession were started at the Baltimore City Health Department, June 7, under the auspices of the state department of health. They will be given by Dr. Max Alexander Novey, chief of the obstetric division of city department, and Dr. William H. F. Warthen, chief of the bureau of child welfare.

Full Time Health Positions.—Dr. William J. French, New York, has been appointed full time health officer of Howard County, with headquarters at Ellicott City, and Dr. Robert H. Johnson, Brookhaven, Miss., full time health officer of Somerset County, with headquarters at Princess Anne. With the installation of full time health service in these counties, there are but two counties remaining in the state with part time health service (THE JOURNAL, Oct. 10, 1931, p. 1082). At present, 94.3 per cent of the rural population of Maryland is covered by full time health service and 97.1 per cent of the state, including Baltimore. Dr. French was director of the Child Welfare Commission of Delaware and the Fargo Child Health Demonstration of the Commonwealth Fund. Dr. Johnson has been director of the Lincoln County Department of Health, cooperating with the Mississippi State Board of Health.

Consultants to City Health Department.—The following physicians were appointed to serve as consultants to the Baltimore Health Department, May 26, according to Baltimore *Health News:*

Dr. Arthur G. Barrett, president, West Baltimore Medical Association.
Dr. Thomas S. Cullen, Maryland State Board of Health.
Dr. Allen W. Freeman, professor of public health administration, Johns Hopkins School of Hygiene and Public Health.
Dr. Wade Hampton Frost, dean, Johns Hopkins School of Hygiene and Public Health.
Dr. Andrew C. Gillis, professor of neurology, University of Maryland School of Medicine.
Dr. George Milton Linthicum, chairman, public health committee, Baltimore City Medical Society.
Dr. Arthur J. Lomas, superintendent, University of Maryland Hospital.
Dr. Maurice C. Pincoffs, professor of medicine, University of Maryland School of Medicine.
Dr. Robert H. Riley, director, Maryland State Department of Health.
Dr. James M. H. Rowland, dean, University of Maryland School of Medicine.
Dr. George Walker, board of supervisors of city charities.
Dr. William H. Welch, director emeritus, Johns Hopkins School of Hygiene and Public Health.
Dr. Samuel Wolman, president, Maryland Tuberculosis Association.

The appointment of this group in this capacity was one of the major recommendations of Dr. Joseph W. Mountin, following his recent survey of health and hospitals of Baltimore.

MASSACHUSETTS

George Strong Derby Fund.—Contributions to a permanent fund to be established at the Massachusetts Eye and Ear Infirmary, Boston, in memory of Dr. George Strong Derby, are being collected. Dr. Derby, until his death, Dec. 12, 1931, was Williams professor of ophthalmology at Harvard University Medical School. The income from the fund will be devoted to projects in which he was interested; at present, it will be used toward the salary of a social worker engaged in the care of patients suffering from glaucoma. Other purposes will be determined from time to time as recommended by the staff of the infirmary and authorized by the board of managers.

MICHIGAN

Society News.—The unveiling of a portrait of Dr. James Decker Munson, for several years medical superintendent of the Traverse City State Hospital, took place, June 10, at a ceremony in the hospital. The portrait was presented by the Grand Traverse-Leelanau County Medical Society and the Traverse City State Hospital Nurses' Alumni Association.——The Kalamazoo Academy of Medicine was addressed, June 21, by Nathan Sinai, D.P.H., Ann Arbor, on "Economic Changes in Medicine," and Dr. John E. Gordon, Detroit, "Acute Infectious Diseases of the Central Nervous System."——Dr. George A. Kamperman, Detroit, addressed the Kent County Medical Society at Grand Rapids, May 26, on "Medical Aspects of Birth Control."——The Macomb County Medical Society heard a paper on "Preventive Medicine and Abortion," June 6, by Dr. Harold C. Mack, Detroit.

MINNESOTA

"Eye Specialist" Sentenced.—Elliott Wilkinson, one of a group of alleged fake "eye doctors" who swindled southern Minnesota residents out of several thousand dollars eight years ago, pleaded guilty to a charge of grand larceny in district court in New Ulm, and was sentenced by Judge A. B. Gislason to a term of one to five years in Stillwater Penitentiary, according to the St. Paul *Dispatch*, April 11. It was said that the charge was the outgrowth of an alleged fake eye operation performed on a woman in September, 1924. Wilkinson also pleaded guilty to a charge of attempted grand larceny in connection with another operation on a man the same year. The judge imposed a similar sentence and then suspended it. Wilkinson was one of the group of eyesight swindlers recently arrested in Texas and extradited to Minnesota. It is reported there are four felony warrants awaiting him in California, all in connection with asserted eyesight swindling operations. Authorities of other states reporting eyesight swindles may be interested in investigating Elliott Wilkinson's activities.

MISSOURI

Personal.—Dr. Joseph Erlanger, professor of physiology, Washington University School of Medicine, St. Louis, was recently given the degree of doctor of laws by the University of California.——Friends of Dr. William H. Allen, Rich Hill, recently held a gathering to observe the physician's eighty-second birthday. Dr. Allen has practiced medicine in Rich

Hill for fifty-seven years and is an honor member of the Bates County Medical Society.

Bulletin on Mental Hygiene.—The *Mental Hygiene Observer* appeared in April, published by the Missouri Society for Mental Hygiene. The officers of the recently reorganized group are Drs. Malcolm A. Bliss, St. Louis, honorary president; James Lewald, St. Louis, president; Emmett F. Hoctor, Farmington, vice president, and Mr. A. W. Jones, secretary. The activities of the organization included a survey of the insane in Missouri, in 1919, which was financed by the Rockefeller Foundation.

MONTANA

State Medical Meeting.—The fifty-fourth annual meeting of the Medical Association of Montana will be held at Miles City, July 13-14, under the presidency of Dr. John H. Garberson, Miles City. The program will include the following speakers:

Dr. Edward H. Cary, Dallas, Texas, President, American Medical Association, "Some Problems of the Modern Doctor."
Dr. John A. Evert, Glendive, "Boehler Treatment of Leg Fractures."
Dr. George E. Brown, Rochester, Minn., "Present Concepts of Hypertension."
Dr. John A. Wolfer, Chicago, "Gall Tract Disease: Surgical Indications."
Dr. Fred F. Attix, Lewistown, "Comments on Local Medical History for Permanent Record."
Dr. George J. McHeffey, Butte, "Oliver Wendell Holmes—Physician."
Dr. Archie L. Gleason, Great Falls, "Subacute and Chronic Pulmonary Lesions in Children."
Dr. Herbert H. James, Butte, "Late Treatment of Cancer of the Cervix with Radium."
Dr. Arthur R. Kintner, Missoula, "Fever of Unknown Origin."
Dr. Harold W. Dobbin, Missoula, "Foreign Body in the Heart."
Dr. Harold C. Joesting, Butte, "Advantage of Unsweetened Evaporated Milk for Infants."

NEW JERSEY

State Medical Election.—Dr. A. Haines Lippincott, Camden, was elected president of the Medical Society of New Jersey at the annual session in Atlantic City, June 17. Vice presidents are Drs. Frederic J. Quigley, Union City; Lancelot Ely, Somerville, and Marcus W. Newcomb, Browns Mills. Drs. John Bennett Morrison, Newark, and Elias J. Marsh, Paterson, were reelected secretary and treasurer, respectively.

License Revoked.—The license to practice medicine and surgery in the state of New Jersey of Dr. Samuel Dixon Mayhew, Wildwood, was recently revoked by the state board of medical examiners because of chronic inebriety.

Society News.—Dr. Leon S. Loizeaux, New York, addressed the Mercer County Medical Society, Trenton, May 11, on obstetric technic.——Drs. Grant Thornton and James Burns Amberson, Jr., New York, were the speakers at a meeting of the Morris County Medical Society, Morristown, May 19, on "Early Diagnosis of Tuberculosis" and "Clinical Course of Tuberculosis," respectively.——At a meeting of the Passaic County Medical Society, Passaic, May 12, Dr. Alfred Gordon, Philadelphia, spoke on "Psychoneuroses in Relation to General Medicine."

NEW YORK

Syracuse Alumni Meeting.—Dr. Edward N. Packard, Saranac Lake, was elected president of the Medical Alumni Association of Syracuse University at the annual meeting, June 2. Clinical conferences and demonstrations marked the reunion. Dr. Francis Carter Wood, New York, was among the speakers at the annual banquet, presenting an address on "The Cancer Situation and the Medical Profession." It was announced that Dr. Albert G. Swift has been appointed professor of surgery to succeed Dr. Edward S. Van Duyn.

Symposium at Saranac Lake.—A medical symposium was held at the National Variety Artists Sanatorium at Saranac Lake, May 28-30, for students at the Trudeau Sanatorium. Among the physicians who participated were Drs. Pol N. Coryllos, New York, who spoke on "Chest Surgery in Tuberculosis"; Edward C. Reifenstein, Syracuse, "Acute Bacterial Endocarditis"; Lemuel Whittington Gorham, Albany, "Pathologic Significance of Cardiac Infarcts"; David H. Ballon, Montreal, "Carcinoma of the Esophagus" and Aaron Brown, New York, "Diagnosis and Treatment of Seasonal Hay Fever."

New York City

Changes at Long Island College.—Dr. Alfred C. Beck has been appointed professor of obstetrics and gynecology at Long Island College of Medicine to succeed the late Dr. John O. Polak. Edgar D. Congdon, who for the past five years has been in charge of the department of anatomy at the Medical School of Chulalankarana University, Bangkok, Siam, has been appointed professor of anatomy. A new division of preventive medicine and community health has been created within the department of medicine, with Dr. Alfred E. Shipley, associate professor of preventive medicine and hygiene, at its head.

Smuggling Uninspected Milk.—Wholesale smuggling of milk and cream into New York from uninspected sources has been reported by the health department. Within the past four months, the department has detailed 191 inspectors with special police authority, who with the aid of fifteen men assigned by the police department have patrolled ferries, bridges, tunnels and detraining points. They barred 25,000 pounds of milk products and destroyed 27,490 pounds of cream from the Middle West, according to the report. Permits of three wholesale dealers are said to have been revoked and action is pending against others. It was said that gangsters were recognized guarding the contraband trucks.

Honor Graduates.—Prizes for excellence of work were awarded to members of the graduating class at Cornell University Medical College at the annual commencement, June 3, as follows:

John Metcalfe Polk Memorial Prizes to students with highest standing—Harold Russell Meyers, Jr., Rudolf Friedhold Bachmann and Charles Kevork Bogoshian.
For efficiency in otology—Jesse Potter Eddy, Rudolf F. Bachmann.
William M. Polk Memorial Prizes in Gynecology—Robert Edward Rothenberg, Abbey David Seley and Henry Carnie Lawson.
Gustav Seeligman Prizes in Obstetrics—Marion Fairfield and Abbey David Seley.
Alfred Moritz Michaelis Prize for efficiency in general medicine—Raymond Gettinger.
For efficiency in neurology—Harold Russell Meyers, Jr.

Dr. Walter L. Niles, professor of clinical medicine at Cornell, delivered the graduating address.

NORTH CAROLINA

Personal.—Dr. Greene L. Rea has been appointed acting health officer of Charlotte, succeeding Dr. Wilbur A. McPhaul, who recently resigned to become health officer of Pensacola, Fla.

University News.—Eighteen students made up the first class graduated from Duke University School of Medicine, Durham, June 8. As a part of the exercises, the class planted ivy sent from the home of Sir William Osler, in Oxford, England, at the entrance to the medical school. Dr. William Sydney Thayer, Baltimore, a former pupil of Osler, made an address at this ceremony and during the commencement season gave a clinic on cardiac disease at Duke Hospital.

Society News.—Dr. Thomas R. Brown, Baltimore, addressed the Eighth District Medical Society at its annual meeting in Greensboro, May 24, on "Medical and Surgical Treatment of Certain Diseases of the Digestive Tract." Among other speakers were Drs. Harry L. Johnson, Elkin, "Treatment of Acute Empyema"; Frederick C. Hubbard, North Wilkesboro, "Gunshot Wounds of the Abdomen" and Russell O. Lyday, Greensboro, "Indications for Conservative and Radical Surgery in Peptic Ulcer."

PENNSYLVANIA

Society News.—Drs. John B. Lownes and James L. Richards, Philadelphia, addressed the Schuylkill County Medical Society, Shenandoah, June 14, on gonorrhea.——A symposium on gastric and duodenal ulcer was presented at a joint meeting of the medical societies of Clearfield, Jefferson and Indiana counties, at the Crystal Springs Hunting Club, near Clearfield, June 23, by three members of the University of Pittsburgh School of Medicine. Dr. Roy R. Snowden discussed the subject from the point of view of the internist; Dr. George W. Grier, that of the roentgenologist, and Dr. Edwin P. Buchanan, that of the surgeon.

Annual Cancer Study Course.—The fourth annual course of study in cancer will be held in Lewistown, August 11, under the auspices of the commission on cancer of the Medical Society of the State of Pennsylvania. Drs. George P. Muller, Philadelphia, and Frederick B. Utley, Pittsburgh, will speak on the surgical and medical aspects of cancer, respectively. In the afternoon, clinics will be conducted by Drs. William Wayne Babcock, Philadelphia, on "Diseases of the Breast"; George E. Pfahler, Philadelphia, "Diseases of the Skin" and Dean Lewis, Baltimore, "Diseases of the Abdomen." During the afternoon also Dr. Byron H. Jackson, Scranton, will conduct a round table discussion and demonstration of roentgenograms. Drs. Charles Falkowsky, Jr., Scranton, Harold L. Foss, Danville, and Jonathan M. Wainwright, Scranton, will make addresses in the evening.

Philadelphia

Professor Donaldson Honored at Seventy-Five.—The volume of the *Journal of Comparative Neurology* beginning with the June issue is dedicated to Henry Herbert Donaldson, Ph.D., professor of neurology at the Wistar Institute of Anatomy and Biology, in honor of his seventy-fifth birthday, which occurred, May 12. Professor Donaldson has been associated with the institute since 1906. Previous to that time he was professor of neurology at the University of Chicago for fourteen years and also taught at Johns Hopkins and Clark universities. In 1895 he published a book on the growth of the brain and in 1915 the results of his studies of development in the rat. Dr. Donaldson was president of the American Association of Anatomists in 1916 and of the American Society of Naturalists in 1927.

Tumor Study Bureau Offers Slides.—The Central Bureau for the Study of Tumors, Lankenau Hospital, Philadelphia, announces that it has available a number of sets of microscopic slides. Each set contains 100 slides from 100 different tumors. Dr. Joseph McFarland, director of the bureau, has prepared a book of mimeographed notes in which the source of each tumor is given, its clinical course briefly summarized, the diagnosis and prognosis, and other explanations. The slides have numbers etched on them, are without labels and are unknowns until identified by reference to a number in the lid of the box. The collection, which is sold for $100 a set for the benefit of the bureau, is adapted to a variety of purposes, such as the self-instruction of resident hospital pathologists in oncology, examination of students and hospital residents, material for microprojection in the classroom, standards for comparison in making diagnosis of the rarer tumors, and raising the standard of work done in hospital laboratories by showing the technicians how satisfactorily prepared sections should look. As the material was used up in making the slides, they cannot be duplicated, the announcement says. Inquiries should be directed to the bureau, Lankenau Hospital, Philadelphia.

SOUTH CAROLINA

Faculty Changes.—At the annual commencement of the Medical College of the State of South Carolina, June 2, these faculty appointments were announced:

Dr. Francis G. Cain, assistant professor of gynecology.
Dr. Wythe M. Rhett, assistant professor of pediatrics.
Dr. Archibald Johnston Buist, Jr., assistant professor of gynecology.
Dr. Joseph I. Waring, lecturer in pediatrics.

Dr. Max William Hemingway of the graduating class was awarded the Ravenel cup for a thesis on "The Maternity Death Rate in South Carolina."

VIRGINIA

Graduate Courses Organized.—The first circuit for the graduate course in prenatal and postnatal care, which is being given under the auspices of the Medical Society of Virginia through a grant from the Commonwealth Fund (THE JOURNAL, June 4, p. 1999) was begun during the first week of June. It includes the medical societies of Nelson, Rockbridge, Albemarle and Augusta counties and the Lynchburg Academy of Medicine. Two-hour sessions will be held weekly for ten weeks under the direction of Dr. Maxwell E. Lapham, formerly of Philadelphia, who was recently appointed to carry out this extension of the state society's activities. Among the subjects covered are early diagnosis of pregnancy, prenatal examination, instructions to patients, preparation for and management of labor and delivery, care of new-born infants, postpartum complications and toxemias of pregnancy. A second circuit of five centers will be begun immediately after the conclusion of the present series in August.

WISCONSIN

District Meeting.—Dr. Morris Fishbein, Chicago, was the guest speaker at an evening meeting of the Sixth District Medical Society at Appleton, June 9, on "Present-Day Trends of Private Practice in the United States." At an afternoon session, demonstrations were presented on the following subjects: treatment of fractures, by Dr. Ralph M. Carter, Green Bay; heart disease, Dr. Newell C. Gilbert, Chicago; varicose veins and ulcers, Dr. Herman O. McPheeters, Minneapolis, and joint and back injuries, Dr. Harry E. Mock, Chicago. Counties in the sixth district are Brown, Kewaunee, Door, Outagamie, Winnebago and Fond du Lac.

Course in Pediatrics.—A course of lectures and clinics in the diseases and feeding of children will be offered to Wisconsin physicians, beginning July 11 and continuing six weeks, under the auspices of the Wisconsin State Medical Society, the University of Wisconsin Medical School and the University of Wisconsin Extension Division. Dr. Wayne A. Rupe, St. Louis, will be the instructor in the course, which will be given in Milwaukee, Waukesha, Racine, Kenosha and Burlington. Among the topics listed for study are newer methods of prevention and treatment of certain contagious diseases, breast feeding and artificial feeding, colic, diarrhea, infantile skin diseases, and treatment of pyelitis, enuresis, nephritis and nephrosis.

Society News.—The Brown-Kewaunee Counties Medical Society at a meeting in Green Bay, May 26, voted to endow a room in the old Fort Howard Hospital building, Green Bay, and dedicate it to the memory of Dr. William Beaumont, who had his office in the building when he was stationed at Fort Howard. The society plans to gather as many Beaumont relics as possible in the room and may eventually establish its library there.——Members of the Fond du Lac, Outagamie and Green Lake county medical societies were guests of the Winnebago County society, at Sunny View Sanatorium, Winnebago, May 20, when Dr. Joseph W. Gale, Madison, spoke on "Surgical Methods in the Treatment of Pulmonary Tuberculosis."——Drs. Louis Bothman and Francis L. Lederer, Chicago, addressed the Central Wisconsin Society of Ophthalmology and Oto-Laryngology, June 4, in Green Bay. Dr. Bothman spoke on "Cataract Surgery in India" and "Detachment of the Retina: Diagnosis and Treatment," and Dr. Lederer, "Mastoiditis: Its Pathology and Indications for Operation" and "Present Status of Malignancies About the Head and Neck and Their Management."——Drs. Austin C. Davis and John M. Berkman, Rochester, Minn., addressed the Chippewa County Medical Society, Chippewa Falls, May 10, on "Adenomatous Goiters" and "Chronic Fevers," respectively.——Drs. Frederic W. Schlutz, Chicago, and Harold B. Miner addressed the Milwaukee Pediatric Society, June 8, on "Significance of the Vitamins in the Nutrition of the Child" and "Congenital Heart Disease," respectively.

GENERAL

Hospital Meeting.—The hospital associations of Virginia and North and South Carolina held a joint meeting at Richmond in May. Paul H. Fesler, Chicago, president of the American Hospital Association, addressed the opening meeting on "Caring for the Veteran in Civilian Hospitals." Dr. Richard B. Davis, Greensboro, was elected president of the North Carolina society; John Bell Williams, D.D.S., Richmond, for Virginia, and Mr. F. O. Bates, Charleston, for South Carolina.

New Members of National Board of Examiners.—At the annual meeting of the National Board of Medical Examiners in Washington, May 2, Dr. Walter L. Bierring, Des Moines, was elected to the board to succeed John G. Bowman, LL.D., Pittsburgh, and Dr. Harold Rypins, New York, to succeed Dr. David Strickler, Denver.

Exhibit on Eugenics.—An exhibit showing the history, content, present researches and trends in eugenics is planned in connection with the Third International Congress of Eugenics, which is to be held at the American Museum of Natural History, New York, August 21-23. The exhibit will be on view at the Museum from August 22 till September 22. Materials for the exhibit will be shown in (1) pedigree charts, (2) statistical charts and tables, (3) photographs and maps, (4) models, casts and drawings, (5) books and scientific papers, (6) scientific apparatus, and (7) living specimens. The main subjects to be represented are: human traits and qualities, human genetics, heredity and environment, heredity and development, human migration, mate selection, differential fecundity, population studies and applied eugenics.

Births Decline in World Centers.—The birth rate in twenty-four of the world's largest cities showed a decline in 1931 of more than 5 per cent from the 1930 rate, according to figures recently made available for forty-two cities. Only two cities, Glasgow and Rio de Janeiro, recorded increases. Berlin had the lowest rate, 8.7 per thousand of population, while Dresden and Frankfort-on-Main were only slightly larger. The highest rate reported was for Madras, India, 40.5. In the United States Pittsburgh had the highest rate, 20.9, but all the fourteen American cities with populations of more than 500,000 reported that the birth rates had declined during 1931. The declines varied from 22 per cent in Boston to 1 per cent in Washington, D. C. The lowest rate in the United States was that of San Francisco, 11.8.

Foundation for Cancer Research.—William H. Donner, retired steel manufacturer of Villanova, Pa., has established a fund of $2,000,000 for the furtherance of cancer research on

a world-wide basis, to be known as the International Cancer Research Foundation. Mr. Donner stipulated that the fund should not be used to erect new buildings or laboratories, but to assist scientists to develop new theories and new research workers and to increase general interest in the cancer problem. The income of the fund is to be distributed to institutions throughout the world, not more than 35 per cent to any one and not more than from 50 to 60 per cent within the United States. Mr. Donner, who established the fund because of the death of a son in 1929, will act as president; Thomas S. Gates, LL.D., president of the University of Pennsylvania, Philadelphia, is vice president, and the directors are Edward R. Weidlein of Mellon Institute for Industrial Research, Pittsburgh, and former Senator George Wharton Pepper, Philadelphia.

News of Epidemics.—Reports to the U. S. Public Health Service from forty-seven states for the four weeks ended May 21 showed 679 cases of typhoid. This is the lowest figure in four years for the corresponding period, only the South Atlantic and South Central states showing any increase. Newspapers recently reported an outbreak in a Negro settlement near Charleston, W. Va., in which a family of seven had the disease and three died. Prompt immunization of all inhabitants of the community checked the spread of the infection. Seven cases in a family near Arcadia, Ind., were traced to contamination of a well on the premises. Pollution of a brook near a baseball diamond was found responsible for two cases in high school players in Worcester, Mass. Thirty-one deaths have been reported from North Carolina for the first quarter of the year, more than twice as many as for the same period in 1931.——Measles has been epidemic in New York State for several weeks, the high point having been reached during the week ended May 21, when 2,643 cases were reported. The number had declined to 1,749 for the week ended June 11, according to *Health News*.——Drs. Fred L. Soper and Allen M. Walcott of the Rockefeller Foundation have gone to La Paz, Bolivia, to assist the Bolivian government in fighting an epidemic of yellow fever in the Santa Cruz district, it is reported. The Foundation has agreed to subscribe $18,000 and the government, 75,000 bolivianos to finance the campaign for eighteen months.

PHILIPPINE ISLANDS

Medical Activities.—A museum depicting the progress of medical and surgical science in the islands will be developed at the University of Santo Tomas, using as a nucleus the collections of Dr. Jose P. Bantug, Manila, who suggested the plan.——Members of the Philippine Health Service gave a banquet, March 28, in honor of Major George F. Lull, health adviser to the governor-general, who returned to the United States. A watch was presented to Major Lull.——Dr. Sixto A. Francisco, Las Banos, is a delegate to the Pacific Regional Health Conference to be held in Honolulu in July and will later make an investigation in the United States of the health of students as affected by college work and extracurricular activities, especially athletics.

CANADA

Physicians Urge Control of Alberta Radium.—Immediate action to prevent the deposits of radium recently found in northern Alberta from falling into the hands of a foreign monopoly was urged on the Canadian government in a resolution adopted by the council of the College of Physicians and Surgeons of Alberta at a recent meeting. The resolution pointed out that heretofore the supply of radium has been limited by the control of the supply by the European-African syndicate and cited reports that foreign commercial interests are now making efforts to obtain control of the Canadian pitchblende deposits.

Resigns as Dean at Eighty-Four.—Dr. John Stewart, 84, has resigned as dean of the Faculty of Medicine of Dalhousie University, Halifax, N. S. Born on Cape Breton Island, Dr. Stewart began his medical studies at Dalhousie but was graduated from the University of Edinburgh Faculty of Medicine in 1877, and for a year was house surgeon under Sir Joseph Lister in London. In the World War Dr. Stewart served overseas as commander of the No. 7 (Dalhousie) Stationary Hospital Unit and in March, 1918, was appointed consulting surgeon at headquarters. On his seventieth birthday King George V reviewed his unit in France. After his return he was appointed dean of the faculty of medicine at Dalhousie in 1920. He had been professor of surgery in the school for many years. The successor to Dr. Stewart is Dr. Harry Gondge Grant, a graduate of Dalhousie in 1912, who is at present connected with the state health department of Virginia, at Richmond, as a member of the International Health Division of the Rockefeller Foundation. Dr. Grant spent several years studying in England and was lecturer in medicine at his alma mater from 1921 to 1925. He also succeeds the late Dr. William H. Hattie as professor of public health.

PORTO RICO

Dr. Bachman Appointed Director.—George W. Bachman, Ph.D., associate professor of parasitology in the School of Tropical Medicine of the University of Porto Rico under the auspices of Columbia University, has been appointed director of the school. Dr. Bachman, who was appointed acting director at the beginning of the past academic year, succeeds Dr. Earl B. McKinley, who resigned to become dean of George Washington University School of Medicine, Washington, D. C. A native of Ohio, Dr. Bachman received the degree of doctor of philosophy from the University of Chicago in 1927. He was also promoted to a full professorship in parasitology.

FOREIGN

Memorial to Dr. Todd.—An annual prize in medical jurisprudence will be established at the University of Sydney, Sydney, Australia, in honor of the late Dr. Robert Henry Todd, as soon as sufficient funds are available. Dr. Todd was lecturer in medical jurisprudence at the university for twenty years. Subscriptions may be sent to the medical secretary, New South Wales Branch of the British Medical Association, British Medical Association House, 135 Macquarie Street, Sydney.

Medical Center in Mexico.—A complete new medical center in connection with the School of Medicine of Nuevo Leon, Monterrey, was recently arranged for when the governor and secretary of the state of Nuevo Leon signed the contracts. The plan now in formulation contemplates a new medical school, a general hospital of 500 beds, a nurses' home, a separate wing for tuberculosis, one for the insane, and another for communicable diseases. It is expected that the entire project will require about five years to complete. The governor has appointed a special committee of the Monterrey branch of the Mexican Medical Association, headed by Dr. Francisco L. Rocha, to act in an advisory capacity. At present there is in the city of Monterrey a hospital of about 350 beds known as the Gonzalez Hospital, constructed about 100 years ago. Here are concentrated units for the treatment of the insane, tuberculosis and communicable diseases, all of which are antiquated, it was said, and must be replaced by modern accommodations.

Chinese Physicians and Marriage.—To obtain information concerning the distribution of physicians in China the medical schools of Cheeloo, St. John's, Yale-in-China and Hacket sent questionnaires to 600 graduates, of whom 211 returned usable replies. Among other things, the questionnaire asked the age at time of marriage, and the number of children with their ages. According to the *Chinese Medical Journal*, 171, or 81 per cent, of the 211 graduates were married. In this group of Chinese physicians who gave the necessary dates, eighty were married before graduation and sixty-three afterward. In this total of 143, marriage occurred an average of 2.3 years before graduation. The age of marriage varied from 14 to 46 years, though in three instances the ages were given as 4, 9 and 12 years. The greatest number of marriages occurred between the twenty-fifth and twenty-ninth year, the peak age being 26; 14 per cent were married before the age of 20. These results are in marked contrast with the age of marriage in the general population, the journal states. Among 4,000 men attending an outpatient medical clinic in Peiping, 54 per cent gave their age at marriage as less than 20. The Chinese married physicians in the questionnaire group averaged 3.46 living births per family, or one birth for 3.26 years of marriage.

Congress on History of Medicine.—The ninth Congress of the International Society for the History of Medicine will be held in Bucarest, Rumania, in September. Subjects chosen for discussion are the evolution of medicine in the Balkan states and the protection of Europe against bubonic plague. Those who wish to read papers are requested to send the title and a summary of their papers as soon as possible to the office of the congress, Bucarest II, Str. Stirbey Voda, 86. Lectures are limited to forty-five minutes and explanations to fifteen minutes and may be in English, French, German, Italian or Spanish. Participants may wish to join others at a general meeting place, which is being arranged in Trieste. Stopovers will be arranged at Athens, at Istambul and at Constantza, Rumania, where the party will take the train for Bucarest.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 4, 1932.

Lord Moynihan on the Advance of Medicine

In his Romanes lecture at Oxford, Lord Moynihan, president of the Royal College of Surgeons, said that surgery had almost reached the end of its progress along the lines which it so far had followed. The most extensive and delicate operations were carried out on every organ in the body, including those only recently made accessible, with a success that not even Lister himself could have believed possible. New methods of treatment might no doubt appear in their further development, but so long as cutting operations of the kind now practiced had to be applied, it was hardly possible that their success could be improved on except through increasing the patient's powers of resistance by preliminary preparation. Heretofore surgeons had been engaged in discovering methods of dealing with structural diseases by mechanical devices. Now they must concern themselves with recognition and correlation of those manifold bodily ailments which result from changes in the function of organs. Patients sought their aid only, as a rule, when something had gone seriously wrong. Hospitals were filled with examples of advanced disease. What would surely advance their knowledge and perhaps lead on a large scale to prevention of disease was hospital research on those suffering from slighter ailments. At present, research work and clinical inquiry were conducted at far distances from each other by men who rarely met. Experimental work should more often be suggested, and even carried out, by those whose experience in clinical work has shown them exactly where investigation might become most profitable. Physiology today was unhappily losing the close relation it had formerly had with clinical medicine. The cleavage was all to the advantage of physiology, all to the detriment of clinical medicine. Physiology had wandered away on its own researches. Its biologic inquiries had been conducted almost exclusively on animals, though during this time the surgeon had gained incalculable victories for clinical medicine. In the future the physiologist and the surgeon should make a common attack on the innumerable mysteries of disease. The greatest of all discoveries in medicine throughout the ages had been made by those directly concerned with clinical problems.

The Medical Problems of Contraception

A conference on the medical problems of contraception has been held under the auspices of the National Birth Control Association. It was attended by more than 200 laboratory workers, medical officers of clinics, health officers and private physicians. Sir Thomas Horder is president of the National Birth Control Association.

Dr. L. F. Hogben, professor of social biology at the London School of Economics, discussed biologic methods of contraception, which were of two kinds—one based on serologic technic, the second on the control of reproductive activity by hormones circulating in the blood stream. The injection of seminal fluid into warm-blooded animals resulted in the formation of spermatotoxins, which in the female produced sterility through their presence in the secretions of the genital tract or, perhaps, in the germ cells themselves. But much research remained to be done on the duration of the spermatotoxic effect before it would be possible to apply the serologic method with success. As to the second method, it was possible to destroy the reproductive elements of the gonads without affecting the cells that manufactured the hormones on which sexual behavior depended. He suggested that the two ovarian hormones estrin and lutein might be used for the production of sterilization.

A long discussion took place on the methods of birth control in use. Of mechanical contrivances, the vaginal diaphragm pessary was stated to be popular.

Road Accidents in 1931

A return just published shows that during 1931, in Great Britain, 6,691 persons were killed on the roads and 202,119 injured. In 1930 the figures were 7,305 killed and 177,895 injured. Thus while the reduction of fatal accidents is a matter for satisfaction, it is offset by an increase in the total number of accidents. Vehicles to which fatal accidents were attributable were as follows: private automobiles, 1,813; automobile vans and trucks, 1,399; motorcycles without pillion passenger, 980; motorcycles with pillion passenger, 451; automobile omnibuses and coaches, 736; motorcycles with sidecar, 184; electric cars and trolly omnibuses, 118; automobile cabs, 65; pedalcycles, 632; horse-drawn vehicles, 103; horses ridden and led, 18.

A Consultant Service Under the National Health Insurance Act

The national health insurance act provides only a service of general practitioners. If the services of a consultant or specialist are required the patient must either pay for it or go to a hospital. At a conference of the faculty of insurance, Dr. G. C. Anderson, deputy medical secretary of the British Medical Association, delivered an important address on the value of the provision of a consultant service. He pointed out that it was not long since the family doctor or general practitioner did not need to worry about roentgen examinations and the intricate laboratory methods of diagnosis and treatment that have been evolved of recent years. These aids are used in private practice, and he thought that insurance practice should approximate it as far as possible. The insurance physician has to depend on the outpatient department of hospitals for special diagnostic services, and as now organized they afford him little help in keeping abreast of modern medicine. The best way to sharpen his faculties and bring his methods down to date would be to bring him into active association with a hospital in his own area. The crying need of the general practitioner is for greater access to such an institution where he will find opportunities for acquiring knowledge at present difficult for him to obtain. Little such cooperation exists now, as the insurance practitioner rarely sees the consultant whose advice he is anxious to obtain, because of the impracticability of such an arrangement in the present overcrowded state of the outpatient departments. The provision of diagnostic facilities in the early stages of diseases, the early access of the insurance practitioner to the specialist in difficult and obscure ailments, and the consequent early treatment would prevent acute ailments from becoming chronic and should before long reduce the amount that is being expended on sick benefits.

The Religion of a Physiologist

Prof. J. S. Haldane stands alone among physiologists in troubling about philosophical problems and insisting that the phenomena of life transcend physical explanation. His Scottish blood may be responsible for this. Though not a member of any church, he delivered an address for "The Christian Evidence Society," entitled "Reality as Spiritual." He said that if the universe surrounding us is no more than the universe described by the physical sciences, we could proceed to prove from observation and experiment that we were also no more than part of it. But this conclusion was completely unwarranted. Our universe was the universe of our experience, while the universe of physical science was only an idealized universe, stripped of all the values actually present in it, since the conceptions of physical science, however useful for practical purposes, were incapable of describing values. The actual universe of our experience was a universe of personality. In it we found the fact of moral obligation—to promote and cherish truth, right

and beauty so far as we could recognize them. That obligation was common to all men and its recognition united us and at the same time showed us that our experiences were no mere separable things but that within us was revealed the all-enbracing personality which men called God. That fact gave to truth, right and beauty their authority, and so gave objectivity to our universe of experience as the manifestation of God.

Spahlinger's Reticence

In THE JOURNAL, March 5, page 828, it was reported that after years of secrecy, for which he has always been severely criticized in this country, Spahlinger professed to disclose his secrets by stating how his vaccines are prepared. But Sir Thomas Horder (THE JOURNAL, April 23, p. 1487) pointed out that he had failed to disclose how his serum was prepared, although it was with this that for twenty years he has claimed to cure tuberculosis. A further criticism of his reticence has come from Sir Frederick Menzies, health officer of the London County Council. He says that although Spahlinger claims that he has disclosed full details of his method of preparing his vaccine, the fact remains that so much information of fundamental importance is missing that no two competent bacteriologists, working independently on his formula, would be likely to produce the same preparation. He made inquiry into the Spahlinger method at the request of the Central Public Health Committee of the London County Council. His report is as follows: "From the information available there is no evidence which would at present justify the trial of this vaccine, under the auspices of the council, on human beings."

PARIS

(From Our Regular Correspondent)

May 25, 1932.

Is Multiple Sclerosis of Syphilitic Origin?

French pathologists are divided on the question of the etiology of multiple sclerosis. Some regard the disease as an infection due to a filtrable virus, although no case of contagion has ever been reported, and endeavor to find a curative serum obtained from monkeys inoculated with the pathologic nerve substance. Others regard it as a late manifestation of hereditary syphilis. At a recent meeting of the Société des médecins des hôpitaux de Paris, Mr. Mendelssohn presented a patient who showed unmistakable signs of hereditary syphilis. She presented a typical case of multiple sclerosis but was so much improved by syphilitic treatment that she may be said to have been cured. Paraplegia, tremor, abolition of the abdominal reflex and of the reflexes of the velum palatinum, exaggeration of the patellar and achilles reflexes, and the condition of the cerebrospinal fluid, all cleared up after four series of treatments with compounds of arsenic, bismuth, mercury and the iodides. This treatment was first instituted because the patient was affected with a mitral stenosis and because her father was syphilitic and her mother presented a positive Wassermann test. Mr. Mendelssohn emphasized the importance of the fact that the cerebrospinal fluid had returned to normal, which is exceptional in the observations of improvements heretofore published. Mr. H. Dufour supported the opinion of Mr. Mendelssohn as to the syphilitic etiology of multiple sclerosis and presented a patient whom he had been treating for twelve years with an antisyphilitic treatment repeated every year. The symptoms, which were progressing when treatment was first begun, have been stabilized for twelve years, which appears to indicate a favorable action of the drugs employed. The author stated that he had accepted since 1916 the syphilitic origin of multiple sclerosis, regarding it as an attenuated hereditary syphilis, but he added that he would be the first to grant the disease its autonomy if it should be shown to be due to a specific infectious agent. All the arguments previously brought forward against the syphilitic origin of tabes and dementia paralytica are the same, he said, as are now urged against the syphilitic origin of multiple sclerosis. Rational, carefully supervised syphilitic treatment has never aggravated multiple sclerosis but has often brought improvement.

Irradiation Over the Suprarenal Capsules in Endarteritis Obliterans

Mr. Zimmern has brought into favor in France the application of roentgen rays to the suprarenal capsules to check the physiologic mechanism of endarteritis obliterans. In collaboration with Chavany and Brunet, he has reported several cases of extensive dry gangrene in which a cure was effected or which were arrested in their evolution by radiotherapy applied to the area of the suprarenal glands. Mr. Leroy des Barres presented recently to the Academy of Medicine a case of endarteritis obliterans of the right external iliac artery, with gangrene of the leg, in which high voltage roentgen therapy applied to the suprarenal capsules brought about such a notable improvement that the amputation of the thigh could be performed at a much lower level than the appearance of the leg at first appeared to justify. Radiotherapy caused an arrest of the gangrene and then an improvement in the circulation, so that the author regretted that he had not resorted to this method earlier, believing that if he had done so the amputation could have been made at a still lower level. Mr. Zimmern himself held that suprarenal irradiation should always be carried out in endarteritis obliterans whenever there appears a menace of gangrene. In an analogous problem, that of true arterial hypertension of suprarenal origin, Mr. Santucci recommended, in an article published in the *Clinique*, the division of the left splanchnic nerve in accordance with the Pende method. This nerve, as he showed in 1903, controls the secretory functions of the suprarenals, and the splanchnic plexuses as a whole exert a vasoconstrictive action on all the vascular area of the abdomen. The division of the splanchnic nerve causes a frank and durable lowering of the arterial pressure in persons with hypertension, whereas all hypertension remedies bring about only a temporary lowering. Durante resected the greater and the lesser left splanchnic nerves in a case of juvenile gangrene due to endarteritis obliterans and in a case of generalized Raynaud's disease, both of which were associated with arterial hypertension, and obtained excellent results. After the intervention, the hypertension retrogressed steadily. Mr. Zimmern holds that high voltage roentgen therapy of the suprarenals will secure just as good results without surgical intervention.

Facial Expressions in the Blind

Mr. Dumas, professor in the Collège de France, who has specialized, as has Pierre Janet, in philosophical questions considered from the psychiatric point of view, has been carrying on research for years on the "laws" of mimicry, having extended his investigations further than Darwin. He recently presented to the Academy of Medicine the results of his research on the expression of feelings, by the mimicry of the face, in the blind. The human face, by means of spontaneous muscular phenomena, gives expression to the feelings within: the joy, sadness, fear, and the like. Inversely, persons likewise sometimes endeavor to delude an observer into believing that certain feelings are being experienced by reproducing voluntarily corresponding muscular contractions, which then take on the value of a mute language. Professor Dumas raised the question as to the origin of this mimicry; that is to say, whether it originates in the form of a remembrance of musculocutaneous sensations that have been experienced or whether it originates as a visual memory and copy of the attitudes and expressions seen in others. To determine this point, he conceived the idea of studying persons who have been blind from birth. Thirty-three observations proved to him that persons blind from birth are unable to express by mimicry feigned emotions. They had spontaneous expression, like anybody else,

but they are unable to imitate such expressions; that is to say, to reproduce them without the cause that creates them. In this domain, as in many others, the blind appear able to make up for the loss of visual gifts by their accentuated tactile sense. Some of the persons studied, by applying the back of the hand to their face, produced movements corresponding to spontaneous expressions and, after some preliminary experimentation, succeeded in reproducing some elementary mimicry. It would be rendering an important service to the blind to teach them to develop forms of mimicry.

A Surgical Sound Film

Professor Gosset recently presented before the Academy of Medicine a sound film, prepared under his direction, by Mr. J. Benoit-Lévy, which opens a new path for the educational film. This film is designed to show the various stages of a surgical operation (an appendicectomy), and Mr. Gosset, for greater clarity, used the motion picture. In the first part of the film, a succession of pictures show the various stages of the operation, while one hears the voice of the professor describing them in a clear and precise manner. In the second part is presented the real operation, the various stages of which are exactly superimposable on the motion pictures previously projected. Mr. Gosset, after his presentation, explained that it had been his desire to produce a film suitable for instruction, pointing out the great interest that surgical science has in recording its various forms of technic in a permanent manner. He looked over recently, through the courtesy of the son of Dr. Doyen, the films that were taken long ago of diverse operations performed by the latter, which enabled Gosset to take account, after many years, of what was good and bad. One can judge thus of the improvement in the technic and of the progress that science has made. Such films have therefore considerable interest for preservation in the archives of the history of surgery. The audience had one criticism to offer on Mr. Gosset's film. The presentation was a little too rapid to permit them to follow all the details of the operation.

The Significance of Tuberculous Bacillemia

The presence of tubercle bacilli in the blood constitutes today a peculiar problem. A direct examination of the blood is usually negative. But the cultivation on various mediums is sometimes positive, and a positive inoculation into guinea-pigs serves as almost certain proof of the presence of the bacillus. Nevertheless, Mr. Izard and Mr. Thiry of Toulouse, by hemoculture in a Loewenstein medium or in a Petrov medium, were able to discover the bacillus only in 13.02 per cent of the observations made on twenty-three patients and fifty-one guinea-pigs, all affected with frank tuberculous lesions. The search in persons with articular rheumatism and erythema nodosum was negative, although the authors expected positive results. They concluded from these observations that bacillemia, contrary to the opinion of Loewenstein, is only a rather rare sign of tuberculosis and of little significance. Even in the forms of acute tuberculosis only a simple migration of bacilli is involved and not a massive septicemia. However, the conception of atypical tuberculosis, by supplying evidence for the filtrable form of the tuberculous virus, may possibly increase the percentage of positive cases. At the same time, J. Troisier and T. de Sanctis Monaldi carried on similar researches and reached peculiar conclusions. By using the Loewenstein medium and the Petragnani medium with asparagin but without peptone, they were more fortunate in their researches. They did not study tuberculous persons but patients affected with manifestly nontuberculous disorders: an ordinary curable pneumonia, a fatal case of streptococcia (type Osler), and suppurative cerebrospinal meningitis with meningococcus type A. They secured every time, by hemoculture, typical human bacilli, frankly virulent for the guinea-pig. Active tuberculosis, however, did not develop in one of these patients. The pneumonia patient subjected four months later to a radiologic examination was found to be cured. The patient with Osler's disease did not present at necropsy any evidence of tuberculosis. The patient with meningitis died following a new augmentation of the meningococcus type A, in spite of the specific serotherapy. In endeavoring to interpret this tuberculous bacteremia associated with a nontuberculous acute disease, the authors held that, in their patients, the acute coccal infection had brought about the appearance of the tuberculous virus that had existed until then in an almost saprophytic state in the organs. The tubercle bacillus found under these conditions in the blood cannot be considered the pathogenic agent of the acute disease but must be regarded as a virus without present pathogenic effect. To sum up, bacillemia is usually absent in frankly tuberculous patients, whereas it may be encountered in nontuberculous acute diseases without having any particular significance.

BERLIN

(From Our Regular Correspondent)

May 23, 1932.

Prospects of Medical Students in Germany

The Verband Deutscher Medizinerschaften has published notes on overcrowding in the medical profession. The following facts are emphasized: The course in medicine from the beginning of study up to the time of obtaining a license to practice comprises seven years; eleven semesters of study, one semester for examinations, and one year internship, cost the student about 10,000 marks, or $2,380, and the state contributes a like sum. Unless a physician is admitted to panel practice, a modest income is at present almost impossible in Germany. There are restrictions governing admission to panel practice; for instance, there may not be more than one physician to 600 insured persons. This proportion has already been reached; hence new admissions are made only to fill vacancies. A preliminary period of three years during which new entrants must serve as assistant physicians, which is a welcome innovation in itself, has been agreed on between the leagues of the medical organizations and the *krankenkassen*, or sick benefit associations. The number of existing assistantships is, however, inadequate for the carrying out of the agreement thus entered into. A portion of the applicants must therefore accept positions as unpaid volunteers or wait for an opening. The fees for the treatment of the insured members of sick benefit associations are exceedingly low. In addition to the medical care proper, there is considerable clerical work required by the *krankenkassen*, for which no additional compensation is granted. It is, however, almost impossible for a young physician to build up an adequate private practice that will relieve him of the necessity of accepting panel service. There are few communal, provincial and federal positions, and vacancies are rare. According to the statements of eminent investigators, the medical profession can absorb no more than from 1,100 to 1,200 oncoming physicians each year without disrupting the profession by the unduly accentuated struggle for existence. That would entail the destruction of a profession occupying a high ethical position. The new medical students enrolled for the past few years have greatly exceeded the estimated number of assimilable young physicians: 1928-1929, 3,350; 1929-1930, 3,795; 1930-1931, 4,267. It is evident that, during the past three years, 7,800 more medical students than needed have received training. The number of medical students, however, continues to increase, whereby the number of physicians without adequate income is increased by further thousands. Hence the German people is facing the growing menace of an inevitable demoralization of an overcrowded medical profession, which fact calls for prompt intervention. Action must be taken to induce those students who study medicine only for the lack of something else to do and those

who in their mental and personal qualities do not rise above the average, if they even equal it, to give up their medical studies. Only the best will be capable of enduring the economic distress without departing from the ideals of the medical profession. This standpoint of the societies of the medical students, as representative of the whole body of medical students and the new medical graduates, will be readily understood; but will anything be done to bring relief? The authorities have sought in vain for a way out of the dilemma, which at the present time appears almost unsolvable. It is to be hoped that the new regulations with respect to examinations, which are being considered and are expected to be completed soon, will open up the way (or, in one sense, will block the way). Without governmental aid and controlling regulations, nothing will be accomplished; for what student is willing to admit that he is not competent, and what student is wise enough and sufficiently self-critical to recognize that he is below the average in intelligence. It is a sad thing for those of the older generation to contemplate the youth of the present day and to note the painful sacrifices that the freedom of learning must make in endeavoring to adjust itself to the times.

Municipal Radium Commissioner Appointed

In the interest of the municipal insurance system of Berlin, the mayor has appointed the chief physician of the Werner-Siemens Institute for Roentgen Research of the Städtisches Krankenhaus Moabit as a special commissioner to supervise roentgen installations, and radium and film depositories, and the electromedical installations in the municipal institutions. The mayor has requested all the municipal plants affected by the order to assist the commissioner in every way possible in his inspection and to comply with his instructions. The city hopes in this way to be able to protect itself against damage claims. Furthermore, this competent centralized supervision affords increased protection to the personnel of the installations in question.

Antisepsis in Barber Shops

Campaigns have been waged of late against insanitary conditions in barber shops, and demands have been made that police regulations be issued to control them. Now Medizinalrat Dr. Schrader has expressed his views. He points out that there is only one regulation that would eliminate all danger; namely, a regulation requiring every customer to supply his own razor, towel, brush, soap, comb, brush, shears and the like. But that is not feasible; nor are such regulations possible as would require barbers to use fresh linen for every customer, and the cleansing of all utensils after being used on a customer; for that would make the prices prohibitive. It is more important to make the barber familiar with the necessary hygienic measures and to call the attention of the public, at the same time, to existing evils. If the customer complains of insanitary practices and threatens to withdraw his patronage, the barber will usually take more care. Schrader mentions several unhygienic practices that he has found common among barbers. Some apply the back of their left thumb to their lips and draw the razor blade over the moistened surface to test the keenness of its edge. In that manner infectious diseases may be transmitted to patrons. Another practice of barbers is to use a piece of newspaper to wipe off the soap on a razor blade. In this way infectious material may be carried to a patron. Barbers' apprentices should have their attention called to the contraindications to the following procedure: In going over a customer's face the second time, barbers will often shave close after moistening the skin with clear water only. This practice gives rise to minute skin injuries, creating ports of entry for infectious organisms. Instruction in regard to these and similar unhygienic practices will accomplish more than police regulations and the imposition of fines.

ITALY

(From Our Regular Correspondent)

April 31, 1932.

Discussion on Traffic Accidents

The Società italiana di medicina sociale held recently its second national congress in Rome, under the chairmanship of Prof. Carlo Foà, director of the Istituto di fisiologia of the University of Milan. Professor Gemelli of Milan discussed the practical value of psychotechnics for the alleviation of the consequences of traffic accidents.

Professor Ciampolini, sanitary inspector of the railways, presented a paper, in collaboration with Professor Boveri, on the morbid factors in drivers of automotive vehicles that predispose to traffic accidents (emotion, excitement, irresoluteness, timidity, and the like). He considered the importance of the medical certificate as the basis of granting drivers' licenses and emphasized the need of observing candidates for licenses in all their neuropsychic manifestations, with particular reference to defects of vision and hearing.

Professor De Bernardinis, of the Ufficio centrale di statistica, gave statistics on street accidents for the period 1926-1930, which showed that the number of accidents had doubled.

Professor Cazzaniga spoke on the part played by the pedestrian in causing street accidents. Various errors are attributed to pedestrians, whereas the true cause of the accidents is usually a misunderstanding on the part of the pedestrian and the driver of each other's mutual intentions. The speed of the vehicle is not the determining factor but the condition of irremediableness in the situation. The safest pedestrian is the one who moves slowly, even though threatened in a traffic jam.

Professor Ponzo, of the University of Rome, presented a paper on the psychophysical factors that predispose to traffic accidents. The physician must endeavor to exclude all persons who are ill adapted to driving, and particularly those who, on the basis of psychotechnical research, present such defects as to justify their elimination. The examination should not be on an exclusively psychotechnical basis but should be preceded by a fundamental clinical examination of the applicant to establish the absence of pathologic factors that predispose to street accidents.

Professor Palmieri of Naples spoke on the part played by alcoholism in the causation of traffic accidents.

The Crusade Against Tuberculosis

The meeting of the Federazione per la lotta contro la tubercolosi was held at Palermo under the chairmanship of Professor Manfredi of the University of Palermo. Cannavò reported on a study of forty patients affected with pulmonary tuberculosis, for the purpose of studying the behavior of the acid-base equilibrium. In every case the degree of changes in the acid-base equilibrium is proportional to the condition of the pulmonary ventilation and to the compensation, if any, on the part of the other organs, of the deficit ascribable to the lungs.

Lucacer spoke on the prognostic value of the functional test of the reticulo-endothelial system in pulmonary tuberculosis. He recalled the proposal of Wedekind and Loewenstein to use the variable retention index of congo red in the various anatomoclinical forms of pulmonary tuberculosis, for their exact differentiation. He applied this test to some hundred tuberculous patients with results that agree with those secured by the proponents of the test. He found, namely, that the exudative types present a bad retention index (5.90 per cent of congo red is found in the blood plasma an hour after the injection), probably in relation with a certain degree of insufficiency due to an overloading of the reticulo-endothelial system, because of the reaction to the infection. He raised the question as to whether the congo red test could furnish also prognostic factors, and with that in view he continued

the research. The results confirmed the correctness of his assumption. In forty infected patients, he found that with an improvement in the local and general conditions of the patient the retention index improved and approached normal values, while it became worse if the patient gave evidence of exacerbation.

Piazza spoke on a test described by him in 1923 that consisted in applying to the urine of tuberculous patients an antiserum secured by injecting old tuberculin (Koch) into a normal rabbit. The test presented two phases, one precipitant and the other lytic. The first is immediate; the second, delayed but constant, is applied by means of the biuret test. The speaker affirmed that his test is specific for pulmonary tuberculosis in febrile periods and recommended some refinements in the technic. He cited control researches that had been made by other authors; among others, those of Santoli, Bellavia, Lucacer and Franco.

Association of Stomatologists and Dentists

The general assembly of the Federazione stomatoiatrica italiana was held recently at the Policlinico di Roma, under the chairmanship of Professor Perna. The constitution of the association of the stomatologists and dentists of Italy was discussed and approved. The constitution will contain this article: "The ranks of the dentists accept without reserve or restrictions the stomatologic idea."

Malaria in the Province of Milan

Professor Piccinini, "provincial physician" of Milan, reported recently to the Comitato antimalarico (malaria commission) the present conditions in the province from the standpoint of malaria infection. The disease is at present confined to a few districts but nevertheless deserves serious consideration. During the past year, twenty-four dispensaries were established for the summer season; chemical treatment of the stagnant waters was carried out, and the topographic malaria chart of the province of Milan was completed. By statistical reports and experimental researches the importance of zootechnical development in the crusade against malaria was confirmed. A study on the relations between rice fields and anophelism was completed and revealed that well cultivated rice fields are not the cause of anophelism.

Trachoma in the Colonial Schools

In combating trachoma, which is still widespread among the native population of Tripolitania, the government operates chiefly through the colonial schools. In Tripoli there has been, since 1916, a special school for trachomatous children. The school has been recently enlarged and better equipped, in order to give to a greater number of children the preventive and curative benefits of medical treatment. At present, the enrolment comprises 597 pupils, which are divided into thirteen classes. A recent report of Professor Festa shows the results secured by this institution, which in a single year brought about the recovery of 178 children.

A Case of Alkaptonuria and Ochronosis

Prof. G. Castronuovo reported recently, to the Accademia delle scienze medico-chirurgiche in Naples, a case that he observed in which marked alkaptonuria and mild ochronosis occurred in the same patient. The cases of alkaptonuria heretofore described in the literature total not more than a hundred, and the cases of ochronosis are still more rare (less than forty). It is rare to find the two conditions in the same patient, although seventeen such cases have been reported in the literature. The patient observed by the speaker was 52 years old and had been alkaptonuric since her birth. From childhood it had been observed that her urine, although containing no sugar or blood, and which was of a clear straw color when voided, on being exposed to the air for some time turned gradually black, as if ink or coal had been mixed with it. The presence of alkaptone was confirmed by chemical tests. The speaker applied some of the urine to pieces of cartilage from a human cadaver and secured a characteristic blackening. Alkaptone, or homogentisic acid, which is derived from aromatic amino-acids, is eliminated unchanged in these patients, whereas in normal persons it is entirely burned up. In these patients, the protein metabolism is disturbed, especially in its disintegrative action, which lies at the basis of the clinical manifestations, among which attention may be called to the changes in the color of excrementa and the slow blackening of such tissues as the sclera, the cartilages, the ligaments and certain skin areas.

Meeting of the Medicosurgical Society of Pavia

The meeting of the Società medico-chirurgica of Pavia was held recently under the chairmanship of Prof. A. Ferrata. Introzzi spoke on puncture of the spleen in malignant granuloma, emphasizing its diagnostic value in the differential diagnosis of the splenomegalic varieties of malignant granuloma without involvement of the peripheral granular system encountered at necropsies. He described then the histologic picture and the appearance, in granulomatous splenomegalia, of the splenic juice obtained by means of the puncture in vivo, and brought out that the presence in it of giant mononuclear and polynuclear elements with numerous nucleoles, identifiable with the Sternberg giant cells, and the presence of elements of a histoid nature, identifiable with epithelioid cells, constituted a diagnostic factor of prime importance—superior to eosinophilia.

Callerio reported the results of his studies on lysozyme, a bacteriolytic substance first described by Fleming in 1922. He confirmed the activity and the diffusion of the lysozyme in nature, and suggested a refinement in the technic for the determination of the phenomena, which refinement consisted in testing the various substances in an emulsion of Micrococcus lysodeikticus in nutritive agar solidified in the form of thin flakes. On cultivating a number of species of bacteria in this medium, the speaker found that all developed as well as on ordinary agar, and that some strains belonging to the group of the enterococcus provoked evident phenomena of lysis similar to those produced by egg albumin and by other substances containing the lysozyme, which are manifested with the appearance of an illuminating halo around the colonies.

Rusconi studied the changes produced in the ovaries of white mice weighing from 5 to 6 Gm., following injection of the urine of a gravida, according to the method of Aschheim-Zondek. The speaker concluded that it is not a question of an early artificial maturation of the ovum but rather of a disturbance that manifests itself by endofollicular hemorrhages and changes in the miosis of the oocyte.

Bianchi spoke on Loewenstein's method for the cultivation of the tubercle bacillus in the blood. A series of control researches on the presence of the tubercle bacillus in the blood gave a negative result. Using data that he collected from the Loewenstein laboratory, the speaker explained the method followed by Loewenstein.

Death of Professor Soli

The death of Professor Soli, occupant of the chair of anatomy at the University of Palermo, is announced. Born at Milan in 1880, he was given charge, in 1922, of the instruction in pathologic anatomy at Sassari. In 1925, as a result of a competitive examination, he was assigned a chair at Bari, from which he removed to Palermo. In his studies on the thymus, he showed its importance in calcium and phosphorus exchange and established the relations of the thymus to other endocrine organs, particularly the genitalia. Other researches concerned the permeability of the placenta, the pathogenesis of tuberculosis, and the diapedesis of leukocytes through the walls of the stomach.

VIENNA

(From Our Regular Correspondent)

April 13, 1932.

The Assassination of Prof. Gustav Alexander

The profession and the public suffered a shock on hearing of the murder of the eminent otologist Prof. Gustav Alexander. An insane tailor, who, twenty-seven years ago, was operated on for a saddle nose by Alexander, then an assistant to Pollitzer in the ear clinic, had cherished feelings of vengeance toward the operator. Back in 1910 he made an attempt to kill Professor Alexander, but the attack failed and the assailant was placed in a psychopathic hospital, where he remained for twelve years. After dismissal from the hospital, he was taken home. There his paranoia developed into a delusion of persecution, under the influence of which he blamed Professor Alexander for all his misfortunes. A few days ago he returned to Vienna, lay in wait for the scientist, and killed him with five shots of his revolver as Alexander left his house.

The fame of the deceased physician was based chiefly on the fact that he introduced surgery into otology and published the results of work on the physiology and pathology of the auditory organs, which made him the leading authority in this field. His publications bear the stamp of a great scientist pointing out ways for the acquisition of new knowledge. His research gave otologists the strongest impulses toward further work. Born in 1873, he obtained his doctor's degree in 1898 and soon became assistant to Zuckerkandl in the anatomic institute, during which period he reported his striking research on the anatomy of the inner ear. He soon became first assistant in the Pollitzer clinic, and in 1907 he took over the ear department of the Policlinic as successor of Professor Urbantschitsch, which post he held until his death. He founded here an "Alexander school," which attracted physicians and students from all parts of the world. Alexander was held in high esteem by numerous physicians in America. As a specialist, he developed remarkable activity. More than 300 publications followed one another in close succession, each one a work of quality. For his researches on "The Auditory Organs of the Echidna" he received the Leuval prize, in 1904, from the otologic congress held in Bordeaux. He published articles also on "Deafness in Cretins," "The Auditory Organs of the Dancing Mouse," "Congenital Deafness," and "Lymphomatous Ear Diseases," and on the functions of the vestibule. His works on "Surgical Ear Diseases" and "Ear Diseases of Childhood," and his "Handbook of the Neurology of the Ear," published in collaboration with Marburg and Brunner, are standard authorities indispensable for the specialist and have been translated into many languages. His research on the problems of heredity, and on the perception of position in space, were interrupted by his death. In the operative technic of otology many important innovations and many cosmetic methods (ear correction) trace their origin to Alexander; the recognition of syphilitic disorders of the inner ear, operation on thrombosis of the sinus by exclusion of the jugular vein, and abscesses of the cerebellum, are inseparably connected with his name. His "Amerikaner Curs" and his operative courses were the most widely known courses in Vienna, being attended by large numbers of foreign physicians.

Death of Professor Lazar

Prof. Dr. Erwin Lazar, expounder of therapeutic pedagogy, died here recently, after a short illness, at the age of 55. The Vienna medical faculty has lost a remarkable personality. As assistant in the Vienna children's clinic, he developed the idea that backward children and juveniles who are menaced psychically by the influences of their environment require special education, in order, through correct pedagogic guidance, to become useful members of society. He devoted himself accordingly to the problem of children who are hard to train and educate, and he developed in this field masterful ideas. At the children's clinic, of which Pirquet later became the director, Lazar established and directed the department of therapeutic pedagogy, where mentally abnormal children were treated. He demonstrated that children sometimes develop criminal tendencies owing to errors in their training and education. In numerous articles, Professor Lazar discussed the treatment of mental disorders of children, and therapeutic pedagogy, and at many congresses he presented papers. His therapeutic pedagogy has been recognized as a model method of instruction. With his system it is possible, after a short period of observation, to find the correct treatment for every abnormal child, whether institutional or family care is required. In his department, a large number of foreign teachers and physicians learned the fundamental bases of the modern education of psychopathic children and are now applying his principles throughout the world.

The Profession and General Economics

At a recent session of the Gesellschaft für Volksgesundheit in Oesterreich, Professor Dr. Tandler discussed the connections between the medical profession and recent developments in economics. The fate of the physicians depends, to a great extent, on economic conditions. Physicians are so to speak contractors on a small scale. The family physician—in Europe, at least—has disappeared because mass consumption and mass production have disturbed the individual relations between the physician and the family. The physician is menaced by the same dangers as the small contractor: unemployment and lack of orders or contracts. The "individual therapy" expected of the general practitioner forces him to unload his responsibility on to the specialist, where the patient's funds are sometimes squandered. But if the practitioner takes the correct attitude, he can help his clients to economize; for he is the real administrator of the organic capital of the patient, a sort of demographic executive to whom is entrusted, to a large extent, the welfare of mankind. Professor Tandler approves the idea of placing the physicians on the same footing as the judges; for the continued existence of the physicians will not be assured until human society comes to recognize that its highest possessions—civil rights and good health—are administrative concerns of the community. He regards the present status of the physician as only a transitional stage. The future of medicine, in Professor Tandler's opinion, lies in the development of health insurance.

The Organized Crusade Against Cancer in Vienna

In the annual report for 1931 of the Public Health Service of Vienna, attention is called to the increase in cancer mortality in recent years. In 1920 the number of deaths in Vienna from malignant neoplasm was 2,400; in 1926 the number increased to 3,700 and in 1931 to 4,900. The number of deaths has therefore doubled in ten years. The cause does not lie in a progressive dissemination of the disease but rather in an improvement in the diagnosis and the greater average age of the population. The most important measure against this menace is a well organized crusade against cancer. For that purpose the municipality of Vienna has purchased 5 Gm. of radium and has established an institute for radiotherapy. In this institute, in addition to the well founded surgical treatment of cancer, the method of irradiation carefully tested in Stockholm and Paris is to be employed. All other therapeutic researches will be fostered. The systematic combating of cancer will be carried out in a manner to show the public that cancer, when diagnosed early, has a high degree of curability. When the terrible implication "incurable" has been divorced from the diagnosis of cancer, physicians will no longer hesitate to inform their patients that they have cancer. About thirty or forty years ago, the diagnosis "tuberculosis" spread much the same terror as does "cancer" today; and now, through indefatigable, organized control, it is recognized as curable. With this in view, Vienna has established consultation centers, where persons who are

anxious or are actually ill can receive answers to questions from competent specialists. In positive cases, these patients are sent at once to the institute for combating cancer, where a detailed examination discloses the nature of the disease. A record card is made out for every cancer patient (even though he is being treated in some other institute), and his case is carefully followed up.

BUENOS AIRES

(From Our Regular Correspondent)

March 30, 1932.

Politics in the Medical Schools

Ever since 1918, medical students of Argentina have been enthusiastic about reforms in medical education. The reformers do not approve of the new regulations in the schools. Whenever any of the supporters of the so-called universitary reform are questioned as to its purpose, the answer differs in each case. Theoretically the following are the principal aims: (1) to give the student body certain rights in the management of the schools; (2) to develop scientific research and to intensify practical teaching; (3) to give the students a broader understanding of life in preference to professional knowledge; (4) to help free the oppressed and to carry on the social redemption of humanity; (5) to give the opportunity to teach to all of those properly fitted, and (6) to provide for professorships of six years without right of succeeding to the same position. In the schools of Rosario the students do not recognize presidents, although they have head commissioners and secretaries. The student body frequently calls strikes on various pretexts, for example, because of Sacco and Vanzetti; to request the return to the country of the communistic members who were exiled; and to show sympathy with strikes made by the working classes. As a rule, the leaders of the strikes are students of the lowest scholastic standing. Some of them have been attending the schools for ten or fifteen years. Students, with some exceptions, are only the "tools" in the hands of politicians and of some professors. As a rule, the teachers who are supporters of the reforms have both poor morals and poor knowledge. The students are registered preferably with a privat-dozent who is not strict in demanding attendance at practical work. They demand that their attendance five or ten times be accepted to cover the entire term. The last demand may explain the fact that some of the first year students, who have not finished the study of anatomy, have already finished the practical and clinical work required during the entire course of medicine. The reformists also wish that the fees for studies be completely abolished (they now pay an amount which represents only 20 per cent of the total expense to the university), they wish the examination for admission to be omitted, and they are decidedly opposed to the restriction of the number of students. This state of affairs has created an antagonism between professors and students. If the faculty does not grant the students' claims they immediately call a strike and attack the faculty; and many times the police seem to ignore it. These conditions lower the standards; the clinical work is not continuous; there is no constant contact between professors and students since the attendance is not regular; the subjects are covered in two or three months, especially the month before the examinations; the students have poor notebooks; hospitals are attended by few students, and the students live in an environment of disrespect and disorder. Many of them obtain their medical degrees without having the necessary preparation.

During the election of professors to the faculty, the students act under the influence of either bad professors or young physicians who, not having as yet a good clientele, try to obtain a chair in the faculty, a position as head of a ward hospital, or popularity to gain political positions. To obtain the votes of the students, they offer them anything. It has been said that the triumph of some candidates in some elections has been secured by bribing the students. During the elections the candidates spend large amounts of money, even 20,000 or more pesos (about $17,200); they install electoral booths in houses near the faculty; they give money to students; they rent fifty or sixty automobiles so that they can send for their student friends to vote to support the candidates. Every year there is trouble caused by this state of affairs, which compels the board of directors of the faculties, either partially or as a whole, to resign. The studies are discontinued almost every year during one or two months and then resumed. It is easy for the students to carry on with this system of violence because some of the daily papers help them. Both politicians and members of the government try to win the good will of the students, but this does not help because the students favor them only for the time they are granting their demands. It is hoped that this system may be improved on by means of better teaching given by full time professors, the continuation of research and the restriction of students by careful selection. Trips of students abroad will probably produce a favorable reaction in the student body.

Disturbances Caused by the Students

The recent changes in the personnel of the government gave origin to some student disturbances. The federations of the students requested from the government the repatriation of communistic members who are in exile; they subscribed to the red international mutual fund; they requested that the professors remain in the faculty a certain length of time, after which they should resign without any rights to be reelected; they rejected the new medical curriculum and by-laws. The principal officers of the national government received every day several commissions sent by the student body, but the members of the faculties were not summoned. However, the government approved the statutes presented by the university, indicating approval of the principles embodied and promising to present to congress new by-laws for the universities. Drs. M. R. Castex and Bonorino Udaondo presented their resignations. Dr. B. A. Houssay did not grant a postponement of his examinations and some one put a bomb in his house. The board of directors declared that every council of directors of the school should include three students with the right to vote and to participate in the management of the school. They issued a decree favoring the temporary nomination of professors without any right to be reelected, and they did not permit the new medical curriculum, which the students opposed, to take effect. Thereupon the board of directors of the faculty of medicine resigned and the vice rector of the university assumed the duty of head of the university by order of the government.

Undulant Fever in Argentina

The members of the Comisión Nacional for the study of Brucella infection in Argentina have broadened the scope of their activities in several provinces. Dr. Sordelli, president of the commission, for seven months was ill with the infection. Cases of undulant fever have been found in men in Capital Federal, Mendoza, San Luis, Córdoba, Buenos Aires, Santa Fé, Santiago del Estero, Tucumán, Catamarca, San Juan, Neuquen and Rio Negro; the largest number of cases was found in Mendoza, Capital Federal, Catamarca and San Luis. The presence of the infection was proved by clinical examination, confirmed by serum reactions and cultures. Infection in goats was discovered in isolated ranches in the provinces of Mendoza, San Juan, Córdoba, San Luis and Catamarca, in cows in Buenos Aires, Santa Fé, Entre Ríos, Corrientes, Córdoba, Catamarca, Mendoza, San Luis, Pampa and Neuquen, and in pigs and sheep in Córdoba and Buenos Aires.

Congress of Comparative Pathology Postponed

The Academia de Medicina of Buenos Aires organized a congress of comparative pathology, which was to meet at Buenos Aires during the present year. Topics to be discussed

were to be Brucella infection, rabies, leishmaniasis, helminthiasis and plague. It had been decided to invite several foreign speakers. Owing, however, to the general economic crisis, a large part of those invited declined their invitations for the time being. This circumstance compelled the committee of organization of the congress to postpone the date of the congress.

BUDAPEST

(From Our Regular Correspondent)

May 10, 1932.

Medicine as a Career

At a recent meeting of the Budapest Postgraduate Association, Dr. Emile Grosz, professor of ophthalmology and president of the International Association for the Eradication of Trachoma, gave an address on medicine as a career. He said that Billroth, in a letter to a friend, whose son intended to become a physician, wrote that he should remember "that the bed of the physician is not one of rose leaves. Competition is growing and the start is difficult. The founding of a family is ever more difficult, and the pleasures of family life are very often disturbed by the practice of medicine. The pleasure of a physician is little, the gratefulness of patients rare, and more rare is the material compensation, but all these should not deter from becoming a physician one who feels the destiny in himself." Billroth added that the feeling of doing one's duties and the rejoicing at having helped others brings the physician contentment and happiness. Today, fifty years later, these words are still true. In the selection of a career, an undoubted influence is family tradition. The sons of physicians often select for their career their father's profession. In Hungary, Koranyi, Bokay, Jendrassik, Hainiss, were physician's sons. Sometimes chance influences the selection of careers. Liebermann, later professor of public hygiene, decided to select medicine as a profession when his father, on being attacked by robbers in a wood, was released because they recognized in him the good physician of the district. Billroth said that a physician, to be able to lend a helping hand to a lot of patients, must possess a fair quantity of knowledge. It is an advantage to a physician that the more he gives up of his knowledge the greater it becomes. The treasure of knowledge of physicians grows in proportion to the outlay; that is, to the help given to others.

How can a young man obtain the knowledge necessary in medical practice, having due regard to the fact that at present the profession is overcrowded and only the fittest can survive? His training starts in the secondary schools. Many lads select medicine who are not endowed with the ideas that can be procured only in the secondary schools. Another requirement is aptness. A young practitioner has to spend several years in hospitals in practical work and while in practice he has to refresh his knowledge by attending postgraduate studies at least once in two years. The Hungarian method of teaching is similar to the German: a good theoretical basis and intensive practical training. It would not be wise to weaken the theoretical education, which is a characteristic of this system; on the other hand, in the second cycle of the studies, which starts with the passing of the intermediary examinations, provision has to be made for adequate practical training as practiced in England and France.

The overcrowding in the medical profession permits raising of the standard. At the end of the first year's study, the unfit have to be strictly sorted out. This is to the interest of the young man as well as to that of the country.

In Hungary, no special examinations have to be passed by those intending to become specialists. This is wrong. At least four years of uninterrupted work in the same field, in recognized clinics or hospitals, ought to be demanded and at the end of this period there ought to be special examinations before the right to be called a specialist is obtained. Sickness insurance offices and state hospitals should employ only specialists who have a special diploma in the respective specialty.

In Hungary the number of physicians exceeds 8,000, which is too many. The situation is rendered more serious by the unfavorable distribution. There are about 4,000 physicians in Budapest alone. The remaining 4,000 are mostly in the towns and cities, while there are more than 2,000 vacancies in villages. In these small villages, physicians are unable to make even a modest living. Some of the physicians are medical officers. There are 29 county, 139 district and 147 city medical officers. In the community health insurance offices throughout the country, about 3,000 physicians are employed. Even so, several thousand physicians are dependent on private practice, which dwindles from year to year and during the economic crisis has almost entirely gone. The number of specialists has increased tremendously. In Budapest, 3,000 physicians call themselves specialists. And the universities still flood the country with new physicians. In the four universities of Hungary, the number of medical students amounts to 2,400 and the number of new graduates is more than 300 yearly. The excess of physicians is large also in other countries. In some countries, entrance to the medical career is subject to limitations; in Hungary there is the percentage normal system, which, of course, will contribute toward a decrease in the number of physicians. The long period of study, the difficulties of making money, will surely reduce the number of entrants. That this natural decrease was not noticeable up to now is due to the fact that all other careers also are overcrowded.

The livelihood of mental workers becomes more difficult from year to year. In spite of this a well trained physician will prosper even if he does not accumulate wealth. In closing, Professor Grosz said that for the disillusionment which one suffers while in practice one is repaid by the feeling of delight in being able to help mankind.

Strike in Hospital Ended

As I wrote before, about seventy young physicians of the Budapest Jewish hospital went on strike because the board of directors refused their demand for a small salary. The strike lasted for about six weeks, causing great inconvenience to the poor patients, who were never before so dependent on gratuitous treatment in the outpatient departments of the Jewish hospital. This fact had the effect that the management of the hospital felt induced to allow to the young doctors, besides full board and residence, 50 pengo (about $9) monthly salary, up to the first of November, when the question of their payment will be definitely settled. The doctors resumed their work, April 12.

Accidents with Arsphenamine Preparations

Dr. Adolf Erdos of Nagyvarad, Transilvania, at a recent meeting of the local medical club, discussed the causes, prevention and treatment of the immediate, the early, and the delayed undesired reactions associated with intensive arsenical treatment of syphilis. He emphasized that the cause may be the toxicity of the drug, caused by broken vials whose contents are oxidized, the method of application, or the intolerance of the patient, or all combined, and that the treatment should take account of the reaction to previous injections, whether the disease is recent, and whether there is any indication of a reaction on the part of the nervous system or viscera. The urine should be examined before every injection, and special caution is necessary if it contains bile pigment, albumin or much sediment. The practice of using big doses (vials containing 4.5 Gm. of neoarsphenamine intended for veterinary purposes), dissolving the whole content in water and distributing it among six to nine patients, though economical, is dangerous. The injection should always be made extremely slowly, while watching for the least untoward sign. The physician, realizing his responsibility, should keep the record of these cases written in full to date, and a solution of epinephrine and of thiosulphate should always be at hand to combat any sign of intolerance.

Marriages

CLARENCE WILLIAM PEAKE, Baltimore, to Miss Mary Elizabeth Bouis of Mount Washington, June 15.

SAUL KENNETH POLLOCK, Wauwautosa, Wis., to Miss Luby Myrtle Bragarnick of Milwaukee, May 22.

ANTHONY P. MURRAY, Girardville, Pa., to Miss Mary A. Noonan of Mahanoy City, June 18.

JOHN JAIRUS BERNHARD, Allentown, Pa., to Miss Hilda Susan Miller of Bangor, June 11.

JAMES O. NALL, Murray, Ky., to Miss Florence Phillips of Meridian, Miss., June 4.

RUSTIN MCINTOSH, New York, to Miss M. Millicent Carey of Baltimore, June 25.

PAUL HIGBEE, Sullivan, Ind., to Miss L. Gertrude De Vine in Chicago, May 22.

Deaths

Michael Osnato ⊕ New York; Columbia University College of Physicans and Surgeons, New York, 1906; member of the American Neurological Association, American Psychiatric Association and the Association for Research in Nervous and Mental Diseases; clinical professor of neurology at his alma mater and professor at the New York Post-Graduate Medical School; consulting neurologist to the Central Islip (N. Y.) Hospital, Manhattan State Hospital, St. Joseph's Hospital and Columbus Hospital; director of the department of neurology, Post-Graduate Hospital; aged 45; died, June 15, in Berlin, Germany.

Norman McLeod Heggie ⊕ Jacksonville, Fla.; University of Maryland School of Medicine, Baltimore, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; served during the World War; oculist and aurist to St. Vincent's Hospital and the Riverside Hospital, where he died, May 9, of coronary thrombosis and arterial hypertension.

Eley Ebert Perisho, Streator, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; councillor of the second district and member of the Illinois State Medical Society; president and formerly secretary of the La Salle County Medical Society; aged 57; on the staff of St. Mary's Hospital, where he died, May 28, of septicemia.

George Keyser Angle, Albuquerque, N. M.; Bellevue Hospital Medical College, New York, 1891; member of the House of Delegates of the American Medical Association in 1910; member and past president of the New Mexico Medical Society; served during the World War; aged 65; died, May 8, of angina pectoris.

Francis Roe Benham ⊕ Syracuse, N. Y.; Syracuse University College of Medicine, 1901; formerly instructor in clinical obstetrics at his alma mater; on the staff of the Onondaga General Hospital; aged 55; died, May 28, of gastric hemorrhage, duodenal ulceration and cirrhosis of the liver.

John Parmenter, Geneva, N. Y.; University of Buffalo School of Medicine, 1883; member of the Medical Society of the State of New York and the American Surgical Association; formerly professor of clinical surgery at his alma mater; bank president; aged 70; died, June 1, of intestinal obstruction.

Byron Fuller Barker ⊕ Bath, Maine; Jefferson Medical College of Philadelphia, 1896; president of the Sagadahoc County Medical Society; fellow of the American College of Physicians; aged 59; on the staff of the Bath City Hospital; where he died, April 29, of septic peritonitis.

Winchester C. Smith, Williston, S. C.; College of Physicians and Surgeons, Baltimore, 1879; member of the South Carolina Medical Association; aged 77; died, May 28, in the University Hospital, Augusta, of chronic cholecystitis, cholelithiasis, thrombophlebitis and gangrene.

Joseph M. Tribble, Lithonia, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; formerly professor of the practice of medicine and diseases of children at his alma mater; at one time mayor of Lithonia; aged 67; died, May 20, in a hospital at Atlanta.

Frank Edward Dean ⊕ Bennington, Vt.; Albany (N. Y.) Medical College, 1915; president of the Bennington County Medical Society; on the staff of the Henry W. Putnam Memorial Hospital; aged 40; died, May 13, of chronic myocarditis and angina pectoris.

Chase P. Ambler ⊕ Asheville, N. C.; Western Reserve University Medical Department, Cleveland, 1889; past president of the Buncombe County Medical Society; medical director and owner of the Ambler Heights Sanitarium; aged 66; died, June 5, of pulmonary edema.

George W. Rossman, Ancram, N. Y.; Albany (N. Y.) Medical College, 1866; member of the Medical Society of the State of New York; past president of the Columbia County Medical Society; aged 91; died, June 11, in Hudson, of chronic endocarditis.

Charles Anthony Beck, Wilmington, Del.; University of Maryland School of Medicine, Baltimore, 1900; member of the Medical Society of Delaware; formerly secretary of the board of health; aged 58; died, May 19, of carcinoma of the gallbladder.

Malcolm Douglass, Jr., Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; aged 67; died, May 31, in the Temple Hospital, of cerebral hemorrhage.

John Harvey Copenhaver ⊕ Bellflower, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; on the staff of St. Joseph's Hospital, Bloomington; aged 55; died, April 26, of pyelonephritis.

Roy Earl Brown ⊕ Washington C. H., Ohio; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; past president of the Fayette County Medical Society; aged 55; died, June 1, of heart disease.

Leo Charles McDermott, Chicago; Georgetown University School of Medicine, Washington, D. C., 1913; on the staffs of the John B. Murphy Hospital and St. Joseph's Hospital; aged 43; died, May 30, in Madison, Wis., of cerebral hemorrhage.

Roger A. Smith, Goldsboro, N. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1879; member of the Medical Society of the State of North Carolina; on the staff of the Goldsboro City Hospital; aged 73; died, May 23.

James Henry Somerville, Jr. ⊕ Tuscaloosa, Ala., Medical College of Alabama, Mobile, 1906; past president and secretary of the Tuscaloosa County Medical Society; on the staff of the Druid City Hospital; aged 49; died, April 20.

Julian Birch Trotter, Rouses Point, N. Y.; University of Buffalo School of Medicine, 1927; member of the Medical Society of the State of New York; aged 31; died, May 27, of injuries received in an automobile accident.

Etta May Hadley-Judd, Lynchburg, Va.; Woman's Medical College of Pennsylvania, Philadelphia, 1895; member of the Medical Society of Virginia; aged 61; died, March 30, of injuries received in an automobile accident.

Emil Christensen ⊕ Two Rivers, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1896; on the staff of the Two Rivers Municipal Hospital; aged 62; was found dead in bed, May 26, of cerebral hemorrhage.

Cornelius J. Phillips ⊕ Chicago; Rush Medical College, Chicago; 1890; aged 73; on the staffs of the German Deaconess Hospital and St. Bernard's Hospital, where he died, June 6, of acute myocarditis and arteriosclerosis.

Jefferson Bostwick Councill, Salisbury, N. C.; College of Physicians and Surgeons, Baltimore, 1885; member of the Medical Society of the State of North Carolina; aged 76; died, April 21, of lymphosarcoma.

Russell D. Toben, Bloomfield, Iowa; Keokuk (Ia.) Medical College, 1897; member of the Iowa State Medical Society; secretary and past president of the Davis County Medical Society; aged 65; died, April 13.

Asher Tunis Applegate, Englishtown, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1869; member of the Medical Society of New Jersey; for thirty-five years mayor; aged 85; died, May 31.

David Wendell Philips, Victor, Iowa; Columbus (Ohio) Medical College, 1885; also a druggist; formerly mayor of Victor and president of the school board; aged 73; died, May 16, of cerebral hemorrhage.

James F. Kline, Anoka, Minn.; University of Minnesota College of Homeopathic Medicine, Minneapolis, 1893; aged 71; died, May 19, of carcinoma of the rectum, pneumonia and cerebral hemorrhage.

⊕ Indicates "Fellow" of the American Medical Association.

Joseph Cook Wallace ✠ Buffalo; Hahnemann Medical College and Hospital of Philadelphia, 1903; on the staff of the Millard Fillmore Hospital; aged 53; died, April 22, of cerebral hemorrhage.

Eugene Hubbell, St. Paul; Hahnemann Medical College and Hospital, Chicago, 1883; aged 77; died, April 20, in the West Side General Hospital, of hemorrhage of the urinary bladder and uremia.

James Muir, New Buffalo, Mich.; Drake University Medical Department, Des Moines, 1897; aged 61; died, May 15, in a hospital at Benton Harbor, of injuries received in an automobile accident.

Alma Lapham Williston, Phillipsburg, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1881; aged 79; died, May 6, in the Warren Hospital, of carcinoma of the stomach.

William Lenox McWilliams, Miami, Okla.; University of Louisville (Ky.) School of Medicine, 1891; formerly mayor and postmaster of Miami; aged 66; died, April 6, of angina pectoris.

Asa Price Martin, Cullman, Ala.; Chattanooga (Tenn.) Medical College, 1897; member of the Medical Association of the State of Alabama; aged 59; died, May 27, of organic heart disease.

Charles G. Van Tilburg, Hayesville, Ohio; Cleveland Medical College, Homeopathic, 1894; formerly member of the county board of health; aged 66; died, April 20, of heart disease.

Frank Harvey Allen ✠ Staples, Minn.; Rush Medical College, Chicago, 1894; formerly mayor and member of the board of education; aged 61; died, May 2, of organic heart disease.

Zachary Taylor Young, New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1911; member of the Louisiana State Medical Society; aged 47; died, May 9.

Charles M. Chamlee, Adairsville, Ga.; University of Georgia Medical Department, Augusta, 1899; aged 57; died, May 11, in the Piedmont Hospital, Atlanta, of carcinoma of the lungs.

Arthur Bremken, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; aged 57; died, May 30, of an overdose of chloroform.

Colin A. Stewart ✠ Bay City, Mich.; Detroit College of Medicine, 1900; on the staffs of the Bay City General Hospital and the Mercy Hospital; aged 55; died, May 1, of heart disease.

Masakichi Shinohara ✠ Los Angeles; Okayama Medical School, Okayama, Japan, 1906; aged 48; died, May 27, in the Southern California Japanese Hospital, of cirrhosis of the liver.

Samuel L. Burton, Richmond Hill, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1900; aged 58; died, March 2, in St. Petersburg, Fla., of pneumonia.

William P. Love, Flatrock, W. Va.; College of Physicians and Surgeons, Baltimore, 1884; aged 70; died, May 10, in the Ball Memorial Hospital, Muncie, Ind., of abdominal carcinoma.

William Ruoff, San Diego, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 63; died, May 21, in the U. S. Naval Hospital, of pulmonary tuberculosis.

William H. McKenna, Austin, Minn. (licensed by law of exemption); aged 88; died, April 26, of coronary occlusion, chronic myocarditis, bronchopneumonia and cardiac asthma.

John Wade, Baltimore; College of Physicians and Surgeons, Baltimore, 1902; aged 68; died, June 2, in Towson, Md., of bronchopneumonia, arterial hypertension and nephrectomy.

Lelon Potter Botsford ✠ Kenmore, N. Y.; New York Homeopathic Medical College and Flower Hospital, New York, 1910; aged 49; died, March 21, of coronary thrombosis.

Francis N. Drake, San Diego, Calif.; Jefferson Medical College of Philadelphia, 1877; aged 81; died, April 16, of carcinoma of the bladder and strangulation of the bowels.

Frank Albert Bagley, Weston, Mo.; University of Illinois College of Medicine, Chicago, 1928; aged 29; died, May 6, in the Research Hospital, Kansas City, of heart disease.

Thomas A. Russell, Spokane, Wash.; Barnes Medical College, St. Louis, 1895; member of the Washington State Medical Association; aged 61; died, May 15, of heart disease.

Joseph Arthur Wolcott, Watertown, Mass. (licensed, Massachusetts, years of practice); medical superintendent of the Watertown Hospital; aged 76; died, May 17.

E. L. Rhodes, Lincoln, Mo.; Joplin (Mo.) Medical College, 1879; past president of the Missouri State Medical Association; bank president; aged 81; died, May 7, of senility.

Alfred Rufus Crain, New York; University of Buffalo School of Medicine, 1881; aged 75; died, May 24, at St. Luke's Hospital, of chronic nephritis and myocarditis.

Judson D. Irwin, St. Louis; Rush Medical College, Chicago, 1878; formerly coroner of St. Louis; aged 79; died, April 20, of carcinoma of the pelvic colon.

John W. Crabtree, Harrisonville, Mo.; Kansas City (Mo.) Medical College, 1896; aged 62; died, April 27, of septic infection of the bladder and chronic cystitis.

Mari Hendrik Philip Panhorst, Jonesboro, Tenn. (licensed, Tennessee, 1889); member of the Tennessee State Medical Association; aged 84; died, April 24.

William Alvin Belt, Kenton, Ohio; Medical College of Ohio, Cincinnati, 1886; member of the Ohio State Medical Association; aged 69; died, May 14.

Thomas Andrew Cravens, Colorado Springs, Colo.; Long Island College Hospital, Brooklyn, 1874; aged 84; died, May 7, of arteriosclerosis and endocarditis.

Enoch Melville Williamson, Dallas, Texas; University of Tennessee Medical Department, Nashville, Tenn., 1883; aged 74; died, May 7, of angina pectoris.

William Frederick Bester, Cleveland; Western Reserve University Medical Department, Cleveland, 1893; aged 60; died, March 1, of cerebral hemorrhage.

George Bundy, Detroit; Detroit College of Medicine, 1912; aged 64; died, May 7, in the Harper Hospital of subarachnoid hemorrhage and arteriosclerosis.

Clarence E. Hutchinson, Ocean Springs, Miss.; Tulane University of Louisiana Medical Department, New Orleans, 1905; aged 50; died, April 24.

Samuel Abrice Stout, Beavertown, Ohio; Hospital College of Medicine, Louisville, Ky., 1897; aged 65; was killed, April 26, in an automobile accident.

Frederick William Bechtold, St. Louis; Washington University School of Medicine, St. Louis, 1908; aged 48; died, May 16, of heart disease.

John S. Prettyman, Milford, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1884; aged 72; died, May 18, of heart disease.

Ernst Erstling, Centreville, Miss.; National Medical University, Chicago, 1905; veteran of the Spanish-American War; aged 65; died, April 23.

Willis H. Cole, Vicksburg, Ind.; Butler University Medical Department, Indianapolis, 1880; postmaster of Vicksburg; aged 78; died, April 29.

Baxter Staples Porter ✠ Monroe, La.; University of Arkansas School of Medicine, Little Rock, 1928; aged 33; was shot and killed, May 30.

Phares Allen Boykin ✠ Jeanerette, La.; University of Alabama Medical Department, Mobile, 1896; aged 58; died, April 3, of pneumonia.

John H. Phillips, Atlanta, Ga.; Baltimore Medical College, 1893; aged 65; died, April 16, in the Crawford W. Long Memorial Hospital.

James William McCray, Oklahoma City, Okla.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1879; aged 76; died, April 6.

L. Emery Comstock, Horse Cave, Ky.; University of Louisville (Ky.) School of Medicine, 1907; aged 59; died, May 22, of septicemia.

Ulfert Luebben Albers, Fraser, Colo.; Denver College of Medicine, 1883; aged 72; died, March 25, in Denver, of chronic myocarditis.

Wilfred A. Nabors, Winnetka, Ill.; Vanderbilt University School of Medicine, Nashville, Tenn., 1892; aged 66; died, May 12.

Barnett Wallace, Franklin, Ind.; Jefferson Medical College of Philadelphia, 1867; aged 95; died, May 24, of chronic myocarditis.

Doc. J. Parker, Birmingham, Ala.; Memphis (Tenn.) Hospital Medical College, 1899; aged 62; died, March 27, of heart disease.

Henry Ehrhardt, Beardstown, Ill.; Missouri Medical College, St. Louis, 1877; aged 79; died, May 12, of heart disease.

Benjamin T. Hall, Benton, Ky.; Eclectic Medical Institute, Cincinnati, 1876; aged 79; died, May 27, of acute dysentery.

Bureau of Investigation

LAMBERT CHEMICAL COMPANY, INC.

The Exploiters of Phos-Phane Would Have Physicians Underwrite Their Financial Success

A number of letters have been received during the past six months from physicians who have been approached by solicitors, or alleged solicitors, for the Lambert Chemical Company, Inc., of Washington, D. C. (This company is not to be confused with the Lambert Pharmacal Company of St. Louis.) A Georgia physician wrote:

> "A representative from the Lambert Chemical Company of Washington, D. C., has just left my office, soliciting the use of a preparation known as Phos-Phane. He stated that they were making a proposition to the profession that the doctor specify this particular form, that a drug store recommended by him would stock it, and that they would then, at the end of a given time, send a check of $6.00 for a carton of the drug as used. He would also be given shares of stock in the company."

From a Florida physician came this letter:

> "Please advise if the Lambert Chemical Company, Inc., Washington, D. C., makers of Phos-Phane, is a reputable concern; if the American Medical Association has ever endorsed Phos-Phane for any particular use, and have you heard of this company's giving doctors stock in the company for endorsing their product."

From an Indiana physician came this:

> "The Lambert Chemical Company, Inc., of Washington, D. C., is putting out a product called Phos-Phane, a laxative, which the company claims is accepted by the Council of the A. M. A. A representative is going around with signed endorsement from the chemistry department of the A. M. A. Please inform me if the representations of the company are genuine and ethical."

Two telegrams from Florida physicians read, respectively:

> (1) "Dr. R. E. Bryant from Virginia here trying give physicians stock Lambert Chemical Company, District of Columbia, provided they sign note which is to be paid by druggist, who would sell Phos-Phane, which Bryant would send druggist. He has your letter endorsing his plan. Is it genuine?"
>
> (2) "Lambert Chemical Company, Washington, D. C., offering fifty dollars free stock in their company to Miami doctors prescribing their preparations. Doctors sign trade acceptance coupon, agreeing to pay for preparations. Many A. M. A. members falling for scheme."

A physician in North Carolina wrote within the last week or two:

> "I am sending the following report of my experience with the Lambert Chemical Company, Inc., of Washington, D. C., with recommendation that the company be investigated. Sometime in November, 1931, a salesman from the above company approached me in my office in regard to a product, Phos-Phane. His proposition was something to this effect: That I sign for a certain number of bottles to be placed in any drug store that I might choose and that if, at the end of a certain time, I had prescribed sufficient Phos-Phane for the entire stock to have been sold, I be given one hundred shares in the company producing Phos-Phane. If I had not prescribed sufficiently to use up the supply of Phos-Phane I was to pay the difference.
>
> "Needless to say, I refused his proposition. A short time later, I received a letter from the Lambert Chemical Company of Washington, D. C., stating that their salesman had placed an order for Phos-Phane in my name, that he was a new man, and that, although they felt sure he was to be trusted, they would like to know just how this order was obtained. My answer to this letter was that there had been no order.
>
> "May the first of this year, I received a notice from my bank that a note to Lambert Chemical Company for $96.00 was due for payment on May 16th. On investigation, this proved to be a 'Trade Acceptance' from the Lambert Chemical Company of Washington, D. C., with my signature forged. It was presented to the Citizens Bank and Trust Company of Southern Pines, N. C., through the National Metropolitan Bank of Washington, D. C."

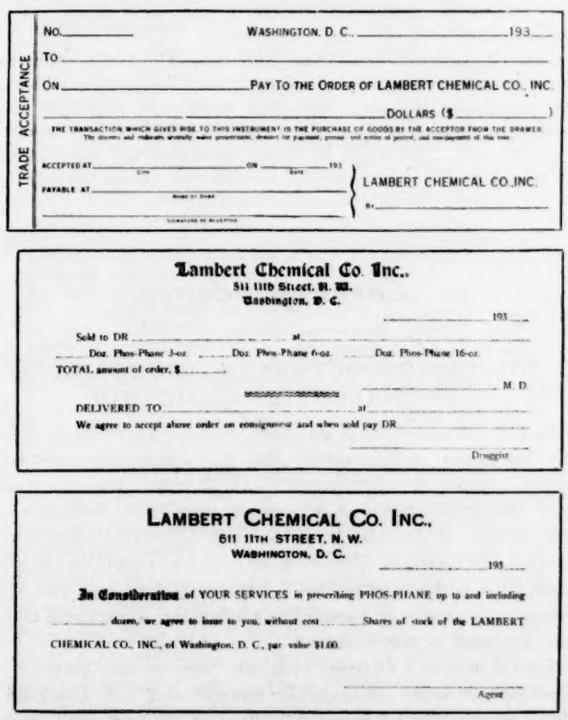
First let it be said that "Phos-Phane" has not been accepted by the Council on Pharmacy and Chemistry for "New and Nonofficial Remedies" nor, of course, has any endorsement of Phos-Phane been given by any officer or employee of the American Medical Association.

In a printed circular on Phos-Phane, the following vague information is given regarding its alleged composition:

> "It is a clear, slightly yellowish, concentrated solution of a sodium phosphate which differs from the normal phosphate and contains in suitable form a particular salt of sodium phosphate which is not precipitated by cold water."

A letter was written to the Lambert Chemical Company, Inc., by the Director of the A. M. A. Chemical Laboratory, asking for a qualitative and quantitative statement regarding the composition of Phos-Phane. The letter was addressed to the company at Washington, D. C., no street address being given, because, at that time, no street address was known. The letter was returned by the Post Office Department marked "Unclaimed" and "Not in the Directory." A month later, another letter was written to the Lambert Chemical Company, this time addressed to 1415 K Street, N. W., Washington, D. C., this address having been sent to the American Medical Association by a Washington physician. This letter also the postal authorities returned marked "Unclaimed." Two months later, a third letter was addressed to the Lambert Chemical Company, also at 1415 K Street, N. W. This time, it reached the concern, which had apparently moved to 511 Eleventh Street, N. W., Washington, D. C. The company replied that its preparation was "not secret in composition" and added:

> "It contains Disodium Phosphate U. S. P. free from effloresced salts, Phosphoric Acid U. S. P. and distilled water. The amount of Disodium Phosphate is eighty-five per cent."



TRADE ACCEPTANCE

NO. _____ WASHINGTON, D. C. _____ 193__

TO _____

ON _____ PAY TO THE ORDER OF LAMBERT CHEMICAL CO., INC.

_____ DOLLARS ($_____)

THE TRANSACTION WHICH GIVES RISE TO THIS INSTRUMENT IS THE PURCHASE OF GOODS BY THE ACCEPTOR FROM THE DRAWER.
The drawer and indorsers severally waive presentment, demand for payment, protest and notice of protest, and non-payment of this note.

ACCEPTED AT _____ (City) ON _____ (Date) 193__

PAYABLE AT _____ (Name of Bank)

_____ (Signature of Acceptor)

LAMBERT CHEMICAL CO., INC.

By _____

Lambert Chemical Co. Inc.,
511 11th Street, N. W.
Washington, D. C.

_____ 193__

Sold to DR _____ at _____

_____ Doz. Phos-Phane 3-oz. _____ Doz. Phos-Phane 6-oz. _____ Doz. Phos-Phane 16-oz.

TOTAL amount of order, $_____

_____ M. D.

DELIVERED TO _____ at _____

We agree to accept above order on consignment and when sold pay DR. _____

_____
Druggist

LAMBERT CHEMICAL CO. INC.,
511 11TH STREET, N. W.
WASHINGTON, D. C.

_____ 193__

In Consideration of YOUR SERVICES in prescribing PHOS-PHANE up to and including _____ dozen, we agree to issue to you, without cost _____ Shares of stock of the LAMBERT CHEMICAL CO., INC., of Washington, D. C., par value $1.00.

_____
Agent

Photographic reproduction (greatly reduced) of three blank forms used by the Lambert Chemical Company, Inc., in the sale of its preparation, Phos-Phane. The top blank, described as a "Trade Acceptance," is, as will be noted, essentially a promissory note that is to be signed by the physicians. The second blank is an agreement signed jointly by the physician and the local druggist, while the third (and lower) blank is an agreement on the part of the Lambert Chemical Company to give to the physician who has bought and prescribed Phos-Phane so many shares of stock, according to the number of dozen bottles of Phos-Phane purchased. Whether stock in the Lambert Chemical Company, Inc., has any value over and above that of the paper on which it is printed is probably a matter that only the future can decide. It would seem, however, that the Lambert Chemical Company, Inc., is playing a game of heads-I-win, tails-you-lose with the physicians.

A letter written by the Lambert Chemical Company, Inc., last August, stated that the company had the following officers and directors:

EUGENE D. CROUSE, Washington, D. C., President.
DR. J. A. RUCKER, Bedford, Va.
DR. E. L. JOHNSON, Bedford, Va.
DR. D. E. REMSBERG, Roanoke, Va.
W. HARVEY WOODS, Salem, Va.
HARRY F. LAMBERT, Lynchburg, Va.

Dr. J. A. Rucker, in answer to an inquiry put to him by the Bureau of Investigation in May of this year, replied that he was not a director nor connected in any official way with

the Lambert Chemical Company and never had been, but that he does have a few shares of its stock. Doctor Rucker expressed the opinion that the company has "an excellent preparation." Dr. E. L. Johnson, who was also written to, replied that he had stock in, and is a director of, the company, and that he found "Phos-Phane is a very efficient and ethical preparation." Dr. D. E. Remsberg wrote that he was one of the directors, but stated that he had never attended any of the directors' meetings. The Lambert Chemical Company is incorporated in Delaware. The active promoter of the concern is said to be Eugene Crouse.

The company's method of doing business is made fairly clear from the letters and telegrams that have been quoted. We are reproducing in miniature with this article some of the blank forms used by the Lambert Chemical Company in getting physicians, practically, to underwrite the sale of its preparation, Phos-Phane. The most important of these forms is the "Trade Acceptance" blank. This, it will be noticed, is to be signed by the "acceptor," who is the physician. When it has been so signed, this blank becomes for all intents and purposes, a promissory note, by which the physician is buying so many bottles of Phos-Phane, agreeing to pay for them, and helping to get them placed in the local drug store on consignment.

Aside altogether from the dubiousness of the transaction from a commercial point of view, it must be quite obvious that any physician that goes into this scheme is violating one of the fundamental tenets of his profession. No medical man with a proper appreciation of his responsibilities will be financially interested in the exploitation of medicinal agents that he may be called upon to prescribe for his patients.

Correspondence

SODIUM THIOCYANATE (RHODANATE) IN NARCOTIC ADDICTION

To the Editor:—There has been disseminated, largely through the lay press, considerable publicity concerning the use of sodium rhodanate (thiocyanate), as a "cure" for drug addiction. Most of this has emanated from that branch of the department of chemistry of Cornell University under Prof. Wilder D. Bancroft. The claim is made that this drug is a dependable and efficient "cure" for morphinism and that it also exerts a favorable influence in alcoholism, acute and chronic, and in some of the psychoses.

The Tompkins County Medical Society has watched this development with considerable interest and has observed the widespread publicity given this drug to the lay press, with no little concern. It thus takes this opportunity to lay before you its opinion on some phases of this problem.

As is well known, in any inquiry regarding the value or lack of value of any therapeutic device or agent for the relief of human illness it is essential that control tests be conducted at the same time or under similar conditions as the experimental tests. These may be accomplished by utilizing nothing in the control procedures or by the use of agents that up to the time of the experiments have been known to influence favorably the given conditions. In the series of experiments with drug addicts in Ithaca, no controls of any type were used. It is well established that bromides and chloral, bromides and codeine, or codeine alone tend to lessen the intensity of the withdrawal phenomena in the treatment of drug addiction; yet these drugs were not used in control cases so as to test the relative efficacy of these compared with sodium rhodanate. It is maintained that this was a grave experimental oversight.

Sodium rhodanate has been freely used by its proponents in numerous disease states despite the fact that the pharmacology of it is, as yet, imperfectly understood. That this free administration is not without danger is attested by the fact that one out of ten patients receiving this drug died an inexplicable death. An autopsy failed to reveal any real cause for the sudden demise. The preagonal condition suggested a central origin.

As with many therapeutic innovations, the original experiment with a single case was a success. Yet the medical society has learned from the superintendent of the New York State Hospital at Willard that the test individual, a morphine addict, had been cured six times previously at that institution. Great publicity followed this single success, with many unpleasant repercussions. Regarding this incident, the Medical Society of Tompkins County, N. Y., feels that to herald to the world as a cure a substance that is apparently successful in one case is unscientific, even though this demonstrates the correctness of the hypothesis regarding its action.

That the hypothesis concerning the action of sodium rhodanate on nervous tissue colloids (Bancroft, W. D., and Rutzler, J. E., Jr.: Colloid Chemistry of Nervous Systems, *J. Phys. Chem.* **35**:1185 [May] 1931) is worthy of consideration and that the drug may have some merit, the members of the medical society would be foolish to deny. Yet the worth-while features, if any, are lost in a maze of enthusiastic claims made for this new therapeutic scheme. The society feels that this whole problem should have been approached with extreme caution and in a highly critical manner and that the usefulness or lack of value of sodium rhodanate in drug addiction should first have been demonstrated in large institutions prior to any suggestion of publicity. The tests should have been conducted by trained and experienced investigators with suitable controls, under strict supervision, and only after the study of a large series of cases over a long period of time should any publicity of any kind been given out. Of the three Ithaca investigators, Prof. W. D. Bancroft, John E. Rutzler, M.S., and Robert S. Gutsell, M.D., not one has had sufficient contact with cases of drug addiction to warrant credence being placed in their observations on this type of case.

It is of interest to state at this time that the medical society has knowledge of more than a hundred cases of drug addiction treated with sodium rhodanate without success. The investigators concerned were unanimous in their declarations that this drug had little or no effect on the withdrawal signs and symptoms and was in no sense a "cure." Regarding the use of sodium rhodanate in alcoholism, the medical society contends that no data have been brought forward to prove any favorable influence in this condition. The occasional marked depressor action of large doses of the rhodanate may prove a contraindication.

To maintain, as did Professor Bancroft before the International Narcotic Education Association in New York City, that sodium rhodanate can be used as a "cure" for drug addiction demonstrates an ignorance of the basic psychobiology of this "maladaptation." Only those who have had long experience with this type of psychologic variant are in a position to judge the possible value of a so-called cure.

The Tompkins County Medical Society of New York has approved this communication, which it submits as a protest against the intensive publicity involving the "cure" of drug addiction by means of sodium rhodanate and to report that there are numerous physicians in touch with some of the details of past experiments with the rhodanate who feel that far too much is claimed for this substance. So far as can be determined at present, there is no magic efficacy nor convincing beneficial effect of sodium rhodanate in disturbances of nervous system colloids in various disease states and the case for the drug remains to be proved.

H. B. SUTTON, M.D.
N. S. MOORE, M.D.
B. F. HAUENSTEIN, M.D.
Ithaca, N. Y.
Special Narcotic Committee of the
Tompkins County Medical Society.

FRACTURE OF THE NECK OF THE FEMUR

To the Editor:—I note that Dr. Magnuson, in his instructive paper on repair of ununited fracture of the neck of the femur (THE JOURNAL, May 21, p. 1791) employs what he calls the Brackett operation.

The operation is, in substance, removal of the trochanter at its base, transplanting it to the outer border of the shaft, and inserting the denuded neck into a hollowed out head. This procedure has already been described by Allison and Henderson under the same misleading title.

Brackett's operation is entirely different both in principle and in design. It was based on the proposition that the nutritive capacity of the trochanter was greater than in the neck fragment. He therefore removed the muscular attachments from the apex of the trochanter and apposed its rounded upper and inner extremity to the hollowed out head. Brackett's title was "operative transplantation of the femoral head to trochanter."

It should be evident, therefore, that one cannot perform a Brackett operation if the trochanter is transplanted to the shaft.

Dr. Magnuson contrasts the Whitman and the "Brackett" operation, as if the only distinction between the two were the removal or retention of the femoral head.

Brackett's illustrative diagram, from his second paper, for comparison with illustrations in the paper of Dr. Magnuson: *A*, head in position on upper and inner surface of trochanter; *B, B*, muscles reattached at lower level on shaft of femur.

The purpose of the reconstruction "Whitman" operation is to restore the capacity for locomotion. The removal of the trochanter at its base provides a new bearing surface or improvised neck, while the transplantation of the trochanter with its attached muscles to a lower level on the shaft restores voluntary control of the limb, thus justifying the title.

It was devised for a class of cases in which the destructive process was advanced and in which the neck was represented only by a shallow, irregular rim of cortical substance enclosing fibrofatty tissue.

In Dr. Magnuson's reported cases, the neck fragment is of sufficient length to permit an approximation to the head after the trochanter has been removed, which permits 45 degrees of abduction. Even in cases of this type, as in all other operations in which the result is dependent on union of the fractured surfaces, there is besides the uncertainty of repair the danger of subsequent degeneration of the cartilage and progressive arthritis deformans.

The typical reconstruction operation has the advantage that it assures to the disabled patient the capacity for weight bearing and fair control of the limb within a definite period.

Since the purpose of this communication is to correct an error in nomenclature which seems to be firmly established, I append Dr. Brackett's diagram for comparison with Dr. Magnuson's illustrations.

For those who care to verify references, it may be stated that Dr. Brackett's description of his operation was published in the *Boston Medical and Surgical Journal*, Sept. 13, 1917. A second paper on the subject appeared in the same journal, June 4, 1925. This was in substance an account of the later results in the original case. No other reports of the Brackett operation have come to my notice.

It is evident that Dr. Magnuson has never performed a Brackett operation. He has, however, presented an interesting question—whether the approximation of the neck to the hollowed out head, made practicable by the reconstruction procedure, may not be more effective in assuring union and improved function than bone grafting or spiking.

ROYAL WHITMAN, M.D., New York.

ANOTHER UNPUBLISHED BEAUMONT LETTER

To the Editor:—This letter from William Beaumont was written to his cousin, Andrew Beaumont, at that time a member of Congress from Pennsylvania. Another letter to him was published in THE JOURNAL, Aug. 22, 1925, page 632. This letter, like the previous one, was presented to the Beaumont Medical Club by André A. Beaumont of Wilkes-Barre, Pa., the grandson of Andrew Beaumont. It is deposited in the Yale University Library. J. E. LANE, M.D., New Haven, Conn.

Mem^{o} for my Hon. Cous.

Hold fast y^{r} political integrity against the combined attack of wealth, power, fraud, flattery, force or fear—the world, the flesh or the devil.

Remember y^{r} friend & be assured of his most cordial esteem & sincere respect for yourself and family.

Let him hear from you often—attend to his little interests at the great national metropolis and be assured of his fervent prayers for your final success in all your undertaking—moral, political, professional and scientific—domestic, agricultural and hymenial—at home and abroad—in public and private—in prosperity and adversity—may good health attend and shower its choicest blessings on your family & friends.

W. B.
8th June 1834.

GLYCINE OR GLYCOCOLL

To the Editor:—The favorable results obtained by Drs. Milhorat, Techner, and Thomas (*Proc. Soc. Exper. Biol. & Med.* **29**:609, 1932) in the treatment of progressive muscular dystrophy with glycine will undoubtedly lead to a more extensive use of this compound in therapy. It seems therefore necessary at this time to call attention to the fact that glycine, also called glycocoll, should not be confused with the photographic developer which is sold under the trade name of glycin. This compound is chemically *p*-hydroxyphenylaminoacetic acid and is distinctly poisonous.

ARMAND J. QUICK, M.D., New York.
Department of Surgical Research, Cornell University Medical College.

THE SANITARY SURVEY OF KANSAS CITY

To the Editor:—Referring to the book review on this subject in THE JOURNAL, May 14, it seems to me that the criticism published therein is quite inconsistent with the fact that we have received second highest honorable mention in the health contest for cities with a population of between 400,000 and 500,000. I note the article states that under food control is grouped the control of rabies, which is not true, and it also states that cutting weeds is not a matter of sanitation. We regard it as such for the reason that vacant lots grown up with weeds which decay and furnish a place for dumping of insanitary matter result usually in an insanitary condition unless kept free of weeds. It is also a menace to the health of the residents in the vicinity of such places on account of hay fever and asthma, mosquito breeding, and so on.

Every branch of our service is under a separate heading, directly under the commissioner of inspections, a division of

the health department, which is divided into the subdivisions of and controlled by a chief sanitary inspector and inspectors, a chief food inspector and inspectors, a chief dairy inspector and inspectors, a chief barber inspector and inspectors, a chief housing inspector and inspectors, and a veterinarian, who is in charge of the immunization of dogs. We have another division under the commissioner of child hygiene and communicable diseases, a division of hospitals and the division of records and vital statistics.

CALVIN L. COOPER, M.D., Kansas City, Mo.
Director of Health.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF SYPHILIS

To the Editor:—A man, now 35 years of age, had a penile ulcer thirteen years ago. One or two intravenous treatments healed it. That was the only treatment. He married twelve years ago and now has two children, aged 6 and 8 years. To date he has "been well." Three months ago I took a blood test in a routine physical examination and found the Wassermann and the Kahn reaction four plus. Since then he has had ten intramuscular injections of mercury and ten intravenous injections of neoarsphenamine. I am now starting on a course of ten injections of sulpharsphenamine bismuth. All the time he has had mercury and iodides orally. Have you any suggestions as to future treatment? What should be done in the cases of the children, who seem healthy? Please omit name.

M.D., Ohio.

ANSWER.—In answering this inquiry, it will be necessary to divide it into two portions: first, the treatment of the father, and, second, the treatment of the offspring. Of course, the wife must be considered as well.

As far as the father is concerned, little evidence is furnished as to his true condition. Nothing is said as to an involvement of the cardiovascular system or as to evidence of involvement of the central nervous system. Moreover, a lumbar puncture has not been done. These details should all be gone into carefully in a patient of this sort, for only too often the four plus Wassermann and Kahn test in a patient of this type may not only indicate a positive serologic reaction but also be another evidence of a serious involvement of the cardiovascular system or of the central nervous system. Therefore, it is rather difficult to answer the correspondent as to the treatment indicated in a patient of this type. If he seems to be in good condition from the standpoint of his heart and aorta it would be advisable, having finished the course of ten injections of neoarsphenamine, to give him a course of ten intramuscular injections of a bismuth salt, as he had ten injections of mercury in the beginning. Potassium bismuth tartrate or sodium bismuth tartrate, from 0.1 to 0.2 Gm., or bismuth salicylate, 0.13 Gm., given once a week for a period of ten to twelve weeks, may be tried; this with another series of neoarsphenamine injections given once a week, each of 0.6 Gm., for a total of ten injections. If the patient stands this treatment well and if his kidneys show no evidence of irritation, we would be almost inclined to follow up this course of neoarsphenamine injections with a further course of bismuth injections intramuscularly and then again another course of neoarsphenamine injections. Throughout this therapy it would be well for the patient to take potassium iodide in 0.5 Gm. doses internally three times a day. Moreover, a serologic examination should be made at the end of each course of injections of the neoarsphenamine and of the bismuth. What further treatment would be indicated in this patient will depend much on whether he has an involvement of the central nervous system or of the cardiovascular system. In this connection, the correspondent would do well to consult Venereal Disease Information, volume 10, number 2, Feb. 20, 1929, entitled "The Management of Syphilis in General Practice."

If the children have syphilis, the mother also will be affected. It is well known that the older a syphilis is, the less danger there is of its being transmitted. This applies even when the patient has had no treatment at all. The French syphilologist Fournier was the first one to call attention to this fact. So there is a possibility that neither the mother nor the children will be affected, as the first child was born five years after the infection. The difficulty arises from the fact that he was married one year after the infection, and it would seem almost impossible for his wife not to contract syphilis, unless most stringent precautionary measures were taken for a period of years, and, naturally, if the wife contracted the disease and received no treatment, there would certainly be a good chance of the children having the disease likewise. It is easier for the disease to be transmitted by way of placental blood than it is for a case of old syphilis in a husband to be transmitted to the wife. The placental blood gives a more intimate and freer opportunity for circulating spirochetes to be transmitted to the child. We would advise that a searching physical examination be made of the wife and children, including serologic tests, lumbar puncture, and, on the mother as well, roentgen examination of the heart and the aorta. Instead of depending on one serologic test, it would be better to have two or three and insist that not only is the Wassermann test done but also one of the good precipitation tests, for example, the Kahn, Kline or Hinton test, as well. If the mother and the children are found to be affected, much the same type of treatment could be recommended as in the case of the father, though naturally the dosage employed in the children would have to be modified somewhat. If there is an involvement of the central nervous system in the case of the father, the mother or the children, naturally this is a problem in itself and could be better answered after knowing the type of involvement.

SODIUM THIOCYANATE (RHODANATE)

To the Editor:—I should appreciate it if you can tell me what sodium rhodanate is. Is it a new chemical compound? I have read a few newspaper articles on its being experimented with as a treatment for drug addicts. I am not able to find it in any textbook on chemistry or materia medica I have.

M.D., Florida.

ANSWER.—Sodium rhodanate is the obsolescent name for sodium thiocyanate (sulphocyanate), a drug producing actions resembling those of the iodides. Statements concerning its actions and uses may be found in standard works of reference such as Sollmann's Manual of Pharmacology, edition 4.

Publicity has recently been given to the work of Wilder D. Bancroft, professor of physical chemistry at Cornell University, and his associates, who last year reported to the National Academy of Sciences on animal experiments in which they had used sodium thiocyanate to prevent withdrawal symptoms in morphine addiction. The theory of these investigators is that the drug combats by "peptization" the "agglomerated" colloids which they hold accompany certain kinds of insanity or the use of certain drugs. Their work has not prompted any medical investigator to publish reports of confirmatory clinical trial, and according to *Science* (May 13, 1932, p. 12 of supplement) preliminary investigation by the U. S. Public Health Service has failed to confirm the claims of Bancroft and his associates.

Although the published reports of these investigators do not appear to make the claim that sodium thiocyanate is a "cure" for morphine addiction, in the *Chemical Bulletin* of the Chicago section of the American Chemical Society for May, 1932, Professor Bancroft is reported as having stated that he knew of a morphine addict who had cured himself by the use of sodium rhodanate without assistance or advice from any one else. Any one with even a moderate knowledge of the treatment of drug addicts must know that an apparent single "cure" does not constitute evidence.

RADIUM EFFECTS ON BRAIN TISSUE

To the Editor:—What is the relative susceptibility of brain tissue to radium rays? Are there any sequelae such as epilepsy, mental retardation or deficiencies known to follow radium therapy about the head? Would from three to five (with 20 mg. of radium) exposures of from one to two hours, screened in the usual way and applied to the forehead of an infant, aged 4 months, have any injurious effect on the brain?

J. H. MURRAY, M.D., Stronghurst, Ill.

ANSWER.—Normal brain tissue is quite resistant to the action of radium and roentgen rays. Cases of damage to the brain by a normal dose of radium have not been recorded; i. e., any dose that does not cause permanent damage to the skin. Sequelae from x-ray or radium treatments over the skull externally have not been noted. The correspondent does not state his dose completely (distance, filter, and area treated), but as far as can be judged he is well within the limits of any injury to the skin and would, therefore, come within the foregoing statement. The subject has been discussed by:

Williamson, C. S.; Brown, R. O., and Butler, J. W.: Effects of Radium on Normal Brain Tissue, *Surg., Gynec. & Obst.* **31**: 239 (Sept.) 1920.

Pancoast, H. K.: Treatment of Brain Tumors by Radiation, *Am. J. Roentgenol.* **9**: 42 (Jan.) 1922.

EXFOLIATIVE DERMATITIS AFTER NEOARSPHENAMINE

To the Editor:—I have a patient to whom I have given six or seven doses of neoarsphenamine. She had a four plus positive Wassermann. The only objective symptom she seems to have was an enlarged sternal end of the clavicle, and definite irregular macules, occasionally found here and there over the body. About three days after the last injection she came in with her left ear swollen, and the face and arms erythematous and scaly. The ear was so swollen that I thought of erysipelas, but she had no fever. She has grown worse; her face and arms in particular are erythematous, swollen and scaly. There are places where the superficial epidermis seems lost and serum exudes. The urine had a very faint trace of albumin at the last examination. She is in bed on a bland diet with a soothing lotion for the skin. Is this a dermatitis from the neoarsphenamine or is it something else? If it is from the neoarsphenamine, what would be the treatment?

M.D., Ohio.

ANSWER.—This case illustrates the need of a careful diagnosis before treatment is begun. The enlargement of the sternal end of the clavicle was probably a gumma; but the definite irregular macules here and there were probably something else and may have had some relation with the sensitiveness to neoarsphenamine. The eruption as described is a typical exfoliative dermatitis, undoubtedly from the treatment. The measures already taken are good. As the oozing ceases and the whole eruption becomes scaly, an ointment will probably be more beneficial than the lotion. Equal parts of wool fat and ointment of rose water, in which is incorporated 10 per cent boric acid, should be comforting. Sodium thiosulphate, beginning with 0.3 Gm. and increasing up to 1 Gm., should be given daily intravenously if well borne. The U. S. P. drug should be used. After the full dose has been reached, it may be given every other day. Once or several times a day the patient should be given a "colloid" bath, made by dissolving a cupful of baking soda in a tubful of water at 100 F., then adding a gauze bag in which three cupfuls of oatmeal has been boiled, stirring it about in the bath and squeezing the bag to get the fine emollient portion into the water. The water should be about 98 F. when the patient enters, and the tub should be protected as much as possible from drafts by blankets over it. The length and frequency of the bath must be regulated by its effect. At the end of the bath, the patient should be dried gently by dabbing with the towel, and the ointment should be applied at once.

Roentgen treatment, one-fourth erythema dose of soft, unfiltered rays to each part once a week, treating only a part of the body at one sitting, is beneficial. The erythrocyte count should be watched during this time. If it falls much below normal, the roentgen treatments should be stopped.

VAGINITIS IN CHILD

To the Editor:—A girl, aged 4 years, has had vaginitis of five months' duration. When I first saw her, January 15, six weeks after the onset, there was a rather abundant purulent discharge, some redness of the mucous membrane, and slight excoriation of the labia and inner surface of the thighs, in addition to frequency and burning on urination. The urinary symptoms disappeared within a week following medication. January 15 she was started on potassium permanganate irrigation, 1: 4,000, for twenty minutes twice a day. In a series of smears from the vagina, cervix and urethra, examined at the state laboratory at Houghton, Mich., gonococci were never found but pus cells have been found, in fewer numbers recently than when first taken two and one-half months ago. The child is well nourished. Her personal cleanliness is excellent. She has had no symptoms referable to the genito-urinary tract for the last two months except occasionally a drop of pus from the vagina when a douche is being given. What do you advise in treatment? Would you advise local applications of silver nitrate 10 per cent or mild silver protein 20 per cent? Are recurrences unusual? The local condition is greatly improved but her family is discouraged with the amount of progress, believing that a complete cure should have been accomplished before this. I had been of the opinion that it is often a matter of months before such a condition is markedly improved, as checked by successive smears negative for gonococci and pus cells. Please omit name.

M.D., Michigan.

ANSWER.—The management depends on the location of the inflammatory lesion. This is best determined by vaginoscopic examination by means of the illuminated vaginoscope or female urethroscope. Punctate lesions are sometimes discovered on the cervix or upper part of the vagina, which may be treated topically with weak solutions of silver nitrate. Skene's tubules at the base of the urethra should also be closely examined, as they may harbor the organism. If pus is expressed from Skene's tubules, irrigation with 5 per cent aqueous mercurochrome-220 soluble by means of a soft-nosed fine cannula is usually successful. Recurrences are not uncommon in vaginitis due to latent infection in the glandular structures. The fact that the smears have been negative for gonococci does not prove definitely that the infection is nonvenereal. There is a nongonorrheal variety, however, which clears up as a rule much sooner than the gonorrheal and is less likely to recur. Rarely, Trichomonas vaginalis is found in the vagina of young girls, producing the symptoms described. These are easily detected by examining the secretion in fresh hanging drop with an equal amount of physiologic solution of sodium chloride. The flagellates are then seen actively moving in the field.

The success of the therapy depends on the original cause of the infection. The vaginal instillation of 1 per cent mercurochrome ointment daily has proved successful in clearing up gonorrheal infection in about ten to twelve weeks' treatment, and the nongonorrheal infection has cleared up in an average of five weeks. It is not uncommon, however, for the course to be prolonged many months or even a year when treatment is given by means of douches. Further details may be found in an article on cervicovaginitis by Irving F. Stein, M. L. Leventhal and Harry Sered in the *American Journal of Diseases of Children* **37**:1203 (June) 1929.

BULLAE ON FEET OF DIABETIC PATIENT

To the Editor:—A man, aged 60, with diabetes mellitus, now under control, has developed a serious bulla on the dorsum of his left foot. This has healed after four weeks of rest in bed, elevation of the limb, and the use of a light cradle. The area surrounding the bulla becomes bluish when he is on his feet. The left anterior tibial artery is palpable, though not so plainly palpable as on the right side. The systolic blood pressure is 180; diastolic, 80. The urine is negative for sugar and albumin. The blood sugar is 120 mg. per hundred cubic centimetetrs. What is the prognosis for recurrence? Kindly omit name.

M.D., Wisconsin.

ANSWER.—The formation of such a bulla is frequently indicative of the onset of localized gangrene, although some patients will have several recurrences without a true gangrenous condition developing. From a therapeutic point of view, it is suggested that in addition to the elevation of the limb the Buerger exercises or the contrasting hot and cold local baths be instituted.

DANGER OF EXPOSURE TO X-RAYS

To the Editor:—A technician is taking roentgenograms of the extremities, the teeth and the gastro-intestinal tract. The entire duration of exposure averages five or six minutes per month. In addition to it, x-ray treatments of superficial skin lesions are given; 0.5 or 1 mm. of aluminum is used as a filter; 85 kilovolt peak is used. The entire duration of all the treatments per month averages an hour. The tube is always placed in such a manner that the rays go in a vertical direction, straight downward. During the treatments the technician is in the adjoining room; the walls are not insulated with lead. The room is well ventilated. Do you consider the secondary radiation as strong enough to cause sterility in the young girl or affect her health in any manner? Kindly omit name.

M.D., Illinois.

ANSWER.—There is no reason to expect any untoward action on the technician from the circumstances described. Epilation or dermatitis would be likely to occur before there would be any effect on the ovary, on the assumption, of course, that the rays are vertical and that the x-ray tube is either enclosed in a lead-glass protection bowl with the apertures directed away from the position of the technician or that the tube is of a self-protecting type. Under all circumstances it is advisable that protection for technicians be provided.

SENSITIZATION TO ARSPHENAMINE

To the Editor:—I have a syphilitic patient, aged 23 years, who had a chancre about three months ago. His Wassermann reaction was 4+. He received three intravenous injections of 0.3 Gm. of neoarsphenamine, one of 0.45 Gm. and nine of 0.6 Gm. After the third injection of 0.6 Gm. of neoarsphenamine, I gave 1 cc. solution of thiobismol, a bismuth preparation, intramuscularly for six doses, on the fifth day following each 0.6 Gm. neoarsphenamine injection. At the end of this series, the last 0.6 Gm. neoarsphenamine injection, the patient had an immediate nitritoid reaction, as evidenced by sneezing, pruritus, fulness in the head and nausea. This was relieved by 5 minims (0.3 cc.) of solution of epinephrine hydrochloride subcutaneously and two three-eighth grain (0.024 Gm.) capsules of ephedrine sulphate. The Wassermann reaction was negative at this time. Three weeks later the same reaction occurred with 0.3 Gm. of neoarsphenamine, which was relieved with epinephine hydrochloride and ephedrine sulphate. Kindly inform me how long a rest period a patient of this type should be given. Would you advise the intramuscular injections of bismuth now; if so, how many? There apparently was no improper technic in the preparation of patient, solution or administration. Kindly omit name.

M.D., New Jersey.

ANSWER.—The patient has in some way become sensitized to neoarsphenamine. The treatment with bismuth or mercury compounds should be continued. After a month or so, other forms of arsphenamine may be tried with great caution, arsphenamine U. S. P. or sulpharsphenamine bismuth. If these can be given, treatment with them and with bismuth or mercury com-

pounds should be continued for at least two more full courses before a rest period longer than two weeks is given. The bismuth treatment so far has been mild. A more vigorous treatment lasting at least eight weeks and not over twelve weeks can be called a course. The chief consideration, naturally, is the continued good health of the patient, and any course of treatment has that as the aim.

LEUKOPLAKIA

To the Editor:—I have a patient about 50 years of age with leukoplakia of the tongue. I removed several large plaques, one of which was undergoing malignant degeneration. These were removed by electrocoagulation and the bases were treated with radium. The submental, sublingual and cervical glands were treated with high voltage x-rays to prevent metastasis. The areas of the large plaques are now smooth and contain no induration. There is, however, a thin uniform white coating resembling a thin leukoplakia covering the entire dorsum and sides of the tongue, excepting the few areas where the large plaques have been removed, which has been present for some years. How can this be removed? Is there any known cause to which this condition can be attributed?

C. W. KOEHLER, M.D., Cincinnati.

ANSWER.—Chronic irritation is the accepted etiologic factor in the causation of leukoplakia. Leukoplakia of the buccal mucosa is intimately associated with carious teeth, tobacco and syphilis. Further extension of existing leukoplakia in the mouth may be prevented by removing all sources of irritation. Carious teeth must be extracted, sharp edges smoothed, and incorrectly constructed dentures corrected. Smoking must be stopped and chewing tobacco prohibited. When there is evidence of syphilis, antisyphilitic treatment should be administered.

A localized area of leukoplakia may be removed by excision. Extensive areas of leukoplakia present a difficult therapeutic problem. Removal of all possible sources of irritation in most instances arrests the process and frequently improves the local condition.

X-RAY BURNS OF LIP

To the Editor:—I have a patient with x-ray burns of the lip and would appreciate literature giving the diagnosis and prognosis or general information. The burn is not very large, about the size of a pea, and barely through the skin. A machine was used with 60 cycles, 30 amperes and 5 kilowatts. Two sets of pictures were taken about two weeks apart. Please send this information as soon as possible.

E. R. DOERING, D.D.S., Parkston, S. D.

ANSWER.—Unless a patient has had previous roentgen treatment it is unusual for a third degree x-ray ulcer to develop two weeks after one x-ray exposure. It is likewise unusual for a second degree ulcer to be so small as the one described. This naturally raises the question of diagnosis. For the protection of the operator, as well as the patient, it would be wise to have a consultation with either a dermatologist or a roentgenologist, to determine the exact nature of the disease, and the treatment would of necessity depend on the nature of the condition.

In the case of second degree radiodermatitis, soothing lotions, such as the well known calamine lotion, or a wet dressing with physiologic solution of sodium chloride should be used. In the case of third degree ulcerations, excision is the proper remedy once the condition has become localized.

A full description and bibliography may be found in MacKee's book: X-Rays and Radium Treatment of Diseases of the Skin.

MIGRAINE WITH OCULAR PRODROMALS

To the Editor:—At indefinite intervals (possibly on two or three successive days or, more frequently, at intervals of from three to six weeks) a patient has an attack beginning with slight dimness of vision, which gradually becomes more pronounced and in ten or fifteen minutes it is accompanied by scintillating zigzag lines (at the right upper side of the visual field), which continue for from fifteen to twenty minutes and then disappear, leaving the vision normal and the patient with a dull headache, which continues for about twenty-four hours. There is no vertigo, nausea or vomiting. No cause has been determined. Would you consider this a form of transient hemianopia or possibly an early sign of some organic disease? Can you suggest any treatment?

E. V. VALZ, M.D., Parris Island, S. C.

ANSWER.—In all probability the patient is suffering from a form of migraine with ocular prodromals. The tempory dimness of vision accompanied by scintillating scotomas, either with or without contraction of the visual fields, followed by a headache of many hours' duration is quite characteristic of this condition. Local therapy or correction of errors of refraction has been entirely without avail. Some cases have responded to the systemic use of cannabis, others to phenobarbital, while in still others intestinal lavage has proved of value.

INJURY TO SPINE BY FALL

To the Editor:—In jumping from a ladder, Aug. 12, 1931, a man landed on a pipe, which rolled under his feet and caused him to fall more or less in a sitting position. Since the injury he has been unable to work on account of pain in the lumbar region. The physical examination is essentially negative. The roentgen examination is negative. The consultation diagnosis is traumatic myofascitis and the statement is made that this type of trouble is stubborn and resists all types of treatments sometimes for many months. I would appreciate any information that you may give me on the diagnosis and prognosis of this case.

W. ELLWOOD TEW, M.D., Bessemer, Mich.

ANSWER.—The diagnosis and opinion of the consultant who sees the patient is much more reliable than might be expressed by any reviewer of the question. The condition described is evidently analogous to rupture of the supraspinatus, achilles, plantaris or biceps tendons. It is impossible to make a positive diagnosis from the data supplied. The prognosis, therefore, must be guarded. The treatment may be outlined to include any or all of the following factors: rest, immobilization, support for a short period, and physical therapy consisting of radiant heat, gentle massage and diathermy cautiously applied.

AGRANULOCYTOSIS

To the Editor:—In the literature, frequent reference is made to the disease agranulocytosis. The terms leukocytosis and lymphocytosis indicate an increase in these types of cells. In the disease first mentioned there is a decrease in granulocytes, as indicated by the prefix a. It seems to me that the word is improper, with the suffix osis indicating an increase and the prefix a indicating an absence. I should like to know whether this term is correct to use. Please omit name.

M.D., California.

ANSWER.—The term agranulocytosis is the one most widely used to describe the condition which is also called malignant neutropenia, idiopathic neutropenia, agranulocytic angina and granulocytopenia.

The a is not a prefix. The word agranulocyte was the term originally chosen for neutrophils without granulations appearing in leukemia. Thus, agranulocytosis means an increase in these atypical neutrophils. Actually the condition is a decrease in cells of the myeloid series and sometimes an increase in lymphocytes, so that idiopathic neutropenia is probably a better name for the condition.

The term agranulocytosis and the term agranulocytic angina have become so firmly established in the literature that it is doubtful whether they can be supplanted.

POSSIBLE CAMPHOR POISONING

To the Editor:—A woman who has taken camphor dissolved in water in teaspoonful doses at frequent intervals for many years presents the blood picture of pernicious anemia, has peripheral neuritis with bilateral wrist drop and toe drop, and has considerable atrophy of the muscles and subcutaneous tissue. Considerable gastric discomfort is complained of, and pain in extremities. The onset began in December with pain in the extremities. December 10, the blood picture was normal. There is no history of metallic poisoning, jamaica ginger addiction or alcoholism. The camphor preparation she has made by dissolving the black or crude camphor in boiling water and storing for use. She is somewhat indefinite about the amounts taken, but has taken more since December, when she first fell ill. Is the camphor responsible for this condition or can it be attributed to impurities in the camphor, perhaps a benzene product which is used in the preparation of camphor commercially. Please omit name.

M.D., Massachusetts.

ANSWER.—The employment of camphor in the manner indicated is certainly most unusual, and probably for this reason the clinical picture described has not been noted in connection with chronic camphor poisoning. There is a possibility that the camphor might be responsible for the condition observed.

COLORIMETER FOR CLINICAL USE

To the Editor:—I should like to have some information in regard to the efficiency of the Kuttner-Leitz Micro-Colorimetetr, sold by E. Leitz, Inc., New York.

RAFAEL COWLEY, M.D., Havana, Cuba.

ANSWER.—The Kuttner-Leitz Micro-Colorimeter is a satisfactory and convenient instrument for clinical use. A number of the methods have been revised since the colorimeter was first made but this has not seriously interfered with the results for clinical purposes. It is advisable to determine normal values among patients with this instrument, as the figures are apt to be a little higher than those commonly quoted. In the use of a microcolorimetric method, technic is an important consideration and the relative accuracy will depend to a large extent on the efficiency of one employing the instrument.

NOSEBLEED

To the Editor:—I have charge of an institution in which a few of the boys have nosebleed. Is there any medicine that can be given to control this condition? Squibb puts out a thromboplastin for hypodermic use. Flint, Eaton & Co. put out some kind of a preparation in fluid form to be given in tablespoonful doses. Are these preparations of value?

J. B. MAXWELL, M.D., Butlerville, Ind.

ANSWER.—There is no satisfactory evidence as to the hemostatic value of the various "thromboplastins" when they are given by mouth. Their intravenous administration is dangerous. The Council on Pharmacy and Chemistry accepts such preparations for local use only. Calcium salts, such as the lactate, have been advocated; and a trial of these may be indicated for repeated hemorrhages. Local treatment, such as pinching the nostrils so as to press the alae tight against the septum, will stop the bleeding in a large percentage of cases. Usually the bleeding spot can be seen on the septum and the bleeding stopped by cauterizing it with silver nitrate or by applying to it powdered potassium permanganate.

ORTHODONTIA

To the Editor:—At what age is it best to have a child's teeth straightened? My child at present is 9 years old and a few teeth are not straight. Please omit name.

M.D., Indiana.

ANSWER.—As a general rule, it is recommended that the correction of irregularities of the teeth be undertaken before the child is 10 years of age. In some cases much can be accomplished before the first permanent molars erupt (about the sixth year). These teeth are the key teeth, so far as irregularities are concerned. Normally these teeth should meet in such a way that the upper first molar is slightly farther back and stands farther out toward the cheek than the lower first molar; that is, the upper molar should overlap the lower to the back and to the outside. If these four teeth (one above and one below on either side) are in proper positions, they serve to maintain the relation of the upper to the lower jaw while the baby teeth are shed and the other permanent teeth erupt, and the rest of the teeth are likely to come in in their proper positions. If these molars are not in proper relation, irregularities of the other teeth are likely to occur.

If the temporary molar teeth happen to be in wrong positions, this often disturbs the position of the first permanent molars. Therefore, attention to the baby molars a few months before the permanent molars erupt is often highly important.

In cases in which it is necessary to use regulating appliances, it is probably best, as a general rule, to begin about the eighth year. The younger the child, the faster the corrections can be made, as the necessary changes in the bone about the teeth occur more rapidly.

TESTS OF PATERNITY

To the Editor:—I have somewhere seen described a test known as the Mayoral and Jiminez paternity test. In this test an emulsion in isotonic saline solution of the father's blood is injected subcutaneously into the pregnant woman's arm. An erythematous and slightly painful reaction occurs within six hours. A similar emulsion from any other man gives a negative result. Is this reaction at present accepted as definite proof of paternity in medicolegal cases?

NATHAN H. MOSS, M.D., Detroit.

ANSWER.—No, the reaction mentioned has no medicolegal standing.

TREATMENT OF SOFT CORNS

To the Editor:—In Queries and Minor Notes (THE JOURNAL, April 16) I note an answer relating to the treatment of soft corn. I should like to add that nearly all of these so-called soft corns are really plantar warts. When these lesions occur in children they may often be eradicated by applying a paste of 50 per cent salicylic acid directly over the lesion and holding it in place for a few days with a small corn pad covered by adhesive plaster. This allows a deep removal of the calloused tissue and often destroys the wart. It may be necessary to repeat this treatment immediately following the first treatment. In intractable cases, and in adults, it is necessary to follow with a destructive dose of x-rays or radium to the closely shielded lesion. Because of the location of the lesion, it is usually more convenient to employ radium than x-rays. Many of these lesions will disappear following the application to them of a crystal of monochloracetic acid the size of a small split pea. This dissolves into the corneous wart and seems to have a selective action. Trichloracetic acid will not do. The area is quite sore for a few days following this procedure. Destruction by electrodesiccation and the like is apt to cause many days of disability and is usually not desired. These lesions are autoinoculable and contagious and often appear on contiguous surfaces of adjacent toes. In very stubborn cases surgery may be considered, but, because of autoinoculation, recurrences are common. The essential in the treatment of a so-called soft corn is the consideration that pathologically it is a verrucous lesion of the plantar wart type.

HERBERT H. BAUCKUS, M.D., Buffalo.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 11. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Montreal, Sept. 17. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

CALIFORNIA: San Francisco, July 11-14. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Regular.* Hartford, July 12-13. *Endorsement.* July 26. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, July 12. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 11-12. Sec., Dr. W. C. Fowler, 203 District Bldg., Washington.

HAWAII: Honolulu, July 11-14. Sec., Dr. James A. Morgan, Room 48 Young Bldg., Honolulu.

MASSACHUSETTS: Boston, July 12-14. Sec., Dr. Stephen Rushmore, 144 State House, Boston.

RHODE ISLAND: Providence, July 7-8. Dir., Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Wauhay, July 19. Dir., Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: *Basic Science.* Seattle, July 7-8. *Regular.* Seattle, July 11-12. Dir., Mr. Charles Maybury, Olympia.

WEST VIRGINIA: Harpers Ferry, July 12. Sec., Dr. W. T. Henshaw, State Health Dept., Charleston.

Wisconsin January Report

Dr. Robert E. Flynn, secretary, Wisconsin State Board of Medical Examiners, reports the written, oral and practical examination held at Madison, Jan. 12-14, 1932. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Fourteen candidates were examined, 12 of whom passed and 2 failed. Fourteen candidates were licensed by reciprocity with other states. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
Northwestern University Medical School	(1931)	79
University of Illinois College of Medicine	(1931)	85
University of Cincinnati College of Medicine	(1931)	76
Marquette University School of Medicine	(1931)	76, 82, 87*
University of Wisconsin Med. School	(1930)	81, 82, 85, 87, 87, 88

FAILED		
College	Year Grad.	Per Cent
University of Wurzburg Faculty of Medicine	(1925)	56
Osteopath †		68

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Southern College of Medicine and Surgery, Georgia	(1914)	S. Carolina
Loyola University School of Medicine	(1931)	Illinois
Northwestern University Medical School	(1930)	Illinois
Rush Medical College	(1931)	Illinois
University of Illinois College of Medicine	(1930)	Illinois
Indiana University School of Medicine	(1916)	Indiana
University of Kansas School of Medicine	(1929)	Kansas
University of Minnesota Medical School	(1930), (1931, 3)	Minnesota
Marquette University School of Medicine	(1928)	Ohio
University of Wisconsin Medical School	(1930)	Missouri
Osteopath ‡		Penna.

* This applicant has completed his medical course and will receive an M.D. degree on completion of an internship.

† Examined in osteopathy and surgery.

‡ Licensed to practice osteopathy and surgery.

West Virginia March Report

Dr. W. T. Henshaw, secretary, Public Health Council of West Virginia, reports the oral and written examination held at Charleston, March 22-24, 1932. The examination covered 11 subjects and included 110 questions. An average of 80 per cent was required to pass. Ten candidates were examined, all of whom passed. Nine physicians were licensed by reciprocity with other states. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
University of Arkansas School of Medicine	(1930)	89.6
Emory University School of Medicine	(1931)	87.4
University of Louisville School of Medicine	(1931)	85.5
University of Maryland School of Medicine and College of Physicians and Surgeons	(1931)	84.8
University of Rochester School of Medicine	(1931)	89
Jefferson Medical College of Philadelphia	(1929)	87.8
Medical College of Virginia	(1931)	84.8
Dalhousie University Faculty of Medicine	(1924)	80.4, 83.6, (1927) 84.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Michigan Medical School		(1928)	Michigan
Memphis Hospital Medical College		(1910)	Texas
University of Tennessee College of Medicine		(1928)	Tennessee
Medical College of Virginia		(1928), (1929), (1930)	Virginia
University of Virginia Department of Medicine		(1926)	Minnesota
University of Manitoba Faculty of Medicine		(1924)	N. Dakota
University of Toronto Faculty of Medicine		(1923)	Penna.

Hawaii April Report

Dr. James A. Morgan, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, April 11-14, 1932. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. Five candidates were examined, 4 of whom passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Stanford University School of Medicine		(1926)	82.9
Rush Medical College		(1931)	85.9
Boston University School of Medicine		(1931)	82.2
Jefferson Medical College of Philadelphia		(1929)	83.7

College	FAILED	Year Grad.	Per Cent
University of St. Thomas College of Med. and Surgery		(1920)	53.4

Book Notices

Female Sex Hormonology: A Review. By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School. Cloth. Price, $3.50. Pp. 131, with 9 illustrations. Philadelphia: W. B. Saunders Company, 1931.

Great confusion exists in the minds of most physicians, owing to the multiplicity of terms used in various publications concerning the female sex hormone. A great deal of experimental work has been done, but no uniformity has been employed in terminology by the experimenters. The glossary that the author has appended to this work alone justifies its publication. In addition, Graves, who has been an interested and active clinical investigator of preparations of the female sex hormone, has simplified the present status of this portion of endocrinology in an acceptable and easily readable form. A complete story in brief of the physiology of the female reproductive system is described in the light of our modern conception, based on a vast amount of scientific work done in the past few years. All students of medicine would profit by carefully reading this concise review of the subject, which, the author justly points out in his introduction, is not at the close but at the beginning of its great ultimate development. A complete practical bibliography and an adequate index are appended.

Selected Writings of John Hughlings Jackson. Volume II: Evolution and Dissolution of the Nervous System, Speech, Various Papers, Addresses and Lectures. Edited for the Guarantors of "Brain" by James Taylor, M.D., F.R.C.P., with the Advice and Assistance of Gordon Holmes, M.D., F.R.C.P., and F. M. R. Walshe, M.D., F.R.C.P. Cloth. Price, 25 shillings. Pp. 510. London: Hodder & Stoughton, Ltd., 1932.

A review of volume I appeared in THE JOURNAL, Dec. 26, 1931, page 1984. The present, and last, volume has three divisions: section I, 118 pages, containing addresses and papers relating principally to what Jackson called "evolution and dissolution" of the nervous system, principally dissolution; section II, 91 pages, articles relating to disorders of speech; section III, 269 pages, various papers, addresses and lectures. A full chronological list of Dr. Jackson's publications (from 1861 to 1909) and a good index close the volume. What was said of volume I may equally be said of this one: it "contains such a mass of information that detailed review is out of the question but no physician can read it without learning a multitude of things, besides enjoying a scientific banquet of neurologic knowledge."

The articles on dissolution of the nervous system present a broad base for a logical conception of diseases of the brain and cord. The author first succinctly defines evolution and then shows how disease is a corresponding dissolution, though "scarcely ever, if ever, do we meet with a case of dissolution which we can suppose to be the exact opposite of evolution." He here presents his oft-repeated thesis: "I submit that disease only produces negative mental symptoms answering to the dissolution, and that all elaborate positive mental symptoms (illusions, hallucinations, delusions and extravagant conduct) are the outcome of activity of nervous elements untouched by any pathological process; that they arise during activity on the lower level of evolution remaining."

It must be a comprehensive philosophy of scientific pathology that enables one rationally to compare insanity, hemiplegia and progressive muscular atrophy. This Jackson does with admirable lucidity. Not only psychiatrists and neurologists but also, perhaps especially, psychoanalysts will find these chapters a mine of rare richness. Dr. Jackson's exposition of the relations of consciousness, voluntary movement, convulsion and paralysis is an extraordinary example of fecund philosophical thinking—with practical application.

Of section II, naturally a good bit is chiefly of historical value; but the combination of skilful clinical neurology, practical psychology, meticulous observation and philosophic generalization at the command of a man writing sixty-six years ago is truly amazing. A few disjointed quotations may be indicative. "To locate the damage which destroys speech and to locate speech are two different things." "Speaking is not merely the utterance of words." "Speaking is propositionizing." "We must not classify on a mixed method of anatomy, physiology and psychology any more than we should classify plants on a mixed natural and empirical method, as exogens, kitchen herbs, graminaceae and shrubs." "Can an aphasic make a will? cannot be answered any more than the question 'Will a piece of string reach across this room?'" "We must not say that the 'memory of words' is a *function* of any part of the nervous system." "There is no 'power' or 'faculty' of speech apart from words revived or revivable in propositions. . . ." "We must study subjects so complex as this empirically before we study them scientifically." "We must be very careful how we use the word 'cause' with regard to disease and symptoms. We must never speak of distructive lesions causing positive symptoms." In explaining the difference between "external" and "internal" speech, Dr. Jackson uses the rather startling but apt illustration of the state of a deaf mute (who talks with his fingers), losing both arms by amputation.

Section III shows Jackson's versatility. Lack of space precludes going into details. The address on the psychology of joking in a pleasing way exhibits the author's mental agility. While abounding in wit and humor, it shows the same keen insight, the same striking comparisons, the same inductive reasoning characteristic of his apparently more serious papers.

The oration on ophthalmology in its relation to general medicine (1877) would be a credit to any living physician. Indeed, no one comes to mind who could even now do the job so well. The paper on the diagnosis and treatment of diseases of the brain contains an amazing wealth of erudition, of stimulating suggestions and profound reasoning. It was delivered forty-four years ago, and no neurologist of today can read it without enriching his mental equipment.

Over against thousands who can acquire great stores of knowledge, rare scores learn to think. John Hughlings Jackson was a prince in this smaller company. He was more: a seer, a prophet, a voice crying in the wilderness; a pioneer, scientific reformer, an earnest, totally unselfish preacher; a persistent seeker for and broadcaster of truth. But in all justice it must be added that Jackson did not write for him who wishes to run as he reads nor for such as—to paraphrase a late beloved colleague—start their eyes to reading and then go off and leave them.

That every reference medical library will have these volumes is a foregone conclusion. That all thoughtful neurologists and psychiatrists will possess and read them is devoutly to be hoped. The medical historian cannot ignore them.

How's Your Blood Pressure? By Clarence L. Andrews, M.D., Attending Physician and Medical Chief at the Atlantic City Hospital. Cloth. Price, $2.50. Pp. 225. New York: Macmillan Company, 1931.

This is an outline of the more common and salient features of blood pressure, normal and abnormal, written in a style that should appeal to the lay reader. The book covers the relation of food, work, worry, heredity, sex and exercise to blood pressure. The chapter on the physiology of the circulation is a bit too complicated for the average person to grasp, and the chapter on the methods of estimating blood pressure might well have been omitted.

Neoplastogenesi: Di una soluzione veramente integrale del secolare problema riguardante l'origine dei tumori. Per Dott. Enrico Gilardoni. Paper. Price, 5 lire. Pp. 91. Rome: Edizioni Sapientia, 1930.

Prof. P. N. Gregoraci of the University of Naples announced in 1925 that all new growths, whether in man, lower animals or plants, owed their genesis to symbiosis between certain micro-organisms and the cells of the host. In man, according to the theory, the spirochete of syphilis accounts for the origin of 75 per cent of cancers, while the tubercle bacillus, the malaria parasite and the gonococcus are the exciting agents for the remainder. The author of the present treatise, inspired by the originator of the doctrine, as well as, according to a foreword, by the death of his mother from a malignant tumor, lays before the world his exposition of the thesis embellished with emotional excursions as uncritical as they are warm.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: General Medicine. Edited by George H. Weaver, M.D.; Lawrason Brown, M.D.; George R. Minot, M.D., S.D.; William B. Castle, M.D.; William D. Stroud, M.D., and Ralph C. Brown, M.D. Series 1931. Cloth. Price, $3. Pp. 814, with 24 illustrations. Chicago: Year Book Publishers, Inc., 1931.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: Dermatology and Syphilis. Edited by Fred Wise, M.D., Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University, and Marion B. Sulzberger, M.D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University. Urology. Edited by John H. Cunningham, M.D., Associate in Genito-Urinary Surgery, Harvard University Post-Graduate School of Medicine. Series 1931. Cloth. Price, $2.25. Pp. 472, with illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: General Therapeutics. Edited by Bernard Fantus, M.S., M.D., Professor of Therapeutics, University of Illinois College of Medicine, and Louis B. Kartoon, B.S., M.D., Instructor of Medicine, University of Illinois College of Medicine. Series 1931. Cloth. Price, $2.25. Pp. 467, with 53 illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: Obstetrics. Edited by Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, University of Chicago Medical School. Gynecology. Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Attending Gynecologist, Cook County Hospital. Series 1931. Cloth. Price, $2.50. Pp. 665, with 44 illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: Pediatrics. Edited by Isaac A. Abt, M.D., Professor of Pediatrics, Northwestern University Medical School with the collaboration of Arthur F. Abt, M.D., Assistant in Pediatrics, Northwestern University Medical School. Series 1931. Cloth. Price, $2.25. Pp. 569, with 37 illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: The Eye. Edited by E. V. L. Brown, M.D., Professor of Ophthalmology, University of Chicago, and Louis Bothman, M.D., Associate Professor of Ophthalmology, University of Chicago. The Ear, Nose and Throat. Edited by George E. Shambaugh, M.D., Professor of Otology, Rhinology and Laryngology, Rush Medical College of the University of Chicago, and Elmer W. Hagens, M.D., Instructor in Otology, Rhinology and Laryngology, Rush Medical College of the University of Chicago. Series 1931. Cloth. Price, $2.50. Pp. 629, with 20 illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: General Surgery. Edited by Evarts A. Graham, A.B., M.D., Professor of Surgery, Washington University School of Medicine. Series 1931. Cloth. Price, $3. Pp. 804, with illustrations. Chicago: Year Book Publishers, Inc., 1932.

The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery: Neurology. Edited by Peter Bassoe, M.D., Clinical Professor of Neurology, Rush Medical College of the University of Chicago. Psychiatry. Edited by Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado Medical School. Series 1931. Cloth. Price, $2.25. Pp. 471, with 28 illustrations. Chicago: Year Book Publishers, Inc., 1932.

This series, printed over many years, shows a new trend for 1931 and 1932. Instead of being a haphazard collection of abstracts, it now presents the literature in various fields with critical comments by the editors on the abstracts that they consider worthy of publication.

In the field of medicine, the six editors have taken this responsibility seriously, and their comments are invariably enlightening. Special sections on undulant fever, tularemia and psittacosis indicate the timeliness of the material. It is felt that the use of vaccines in whooping cough is still an open question, that convalescent serum for the prevention of measles is an established measure, that diphtheria toxoid is gradually replacing toxin-antitoxin for diphtheria, and that rabies may be eliminated by strict enforcement of the muzzling laws. The reports on the use of stramonium in encephalitis are encouraging. Family physicians are urged to assume their responsibility in vaccination against smallpox, since there are still 50,000 cases of smallpox annually in this country. The discussion of colds by Lawrason Brown reveals the failure thus far to control this most common of diseases. The mucin treatment of gastric ulcer and duodenal ulcer is given consideration, and the editor does not feel that it presents any considerable improvement over the Sippy technic. There is beginning to be a reasonable classification of blood dyscrasias with the development of new information from various clinics.

In the book on surgery, now edited by Evarts A. Graham, special attention is paid to thrombosis and embolism, the maggot treatment of osteomyelitis, the rate of healing of wounds, spinal anesthesia and phrenicectomy. This volume is marked not only by numerous thoughtful editorial comments but also by the excellence of the abstracts.

The volume on therapeutics, by Fantus and Kartoon, summarizes the literature made available during the year and is full of practical hints for everyday use in the practice of medicine. The classification of the therapeutic technics is unusual and is concerned with physiologic actions rather than with materia medica.

The volume on neurology and psychiatry brings its subject quite down to date and reveals a conservative attitude toward psychoanalysis. Thus, in criticizing an article on psychoanalysis and eye disturbances, Dr. Ebaugh says: "Psychoanalysis is open to the criticism of not being objective and scientific on the basis of articles of this type which are unrelated to case material." No doubt the psychoanalysts have introduced into medicine more imagination and theory than has been brought into the field in any other branch of medical study.

The volumes on the various specialties are limited largely to abstracts of new contributions to the field concerned and thus supply new material rather than complete reviews. Apparently evidence is beginning to be developed to support Noguchi's conception of the cause of trachoma. There continues to be considerable argument as to just when a dead tooth should or should not be removed.

The volume on pediatrics opens with an excellent outline of the social position of pediatrics by Dr. Isaac A. Abt. It includes considerations of progress in every field of medicine, since pediatrics must be, after all, a complete consideration of medicine as applied to the child.

The volume on obstetrics continues to present the views of DeLee and his school in the usual satisfactory manner.

The volume on dermatology and syphilis appears with two new editors, who point out that they have chosen their material largely with the general practitioner in mind. The abstracts are extensive, in fact so extensive that they may indicate the lack of experience of the authors in selecting exclusively significant material.

Opuscula selecta Neerlandicorum de arte medica. Fasciculus decimus quem curatores miscellaneorum quae vocantur Nederlandsch Tijdschrift voor Geneeskunde collegerunt et ediderunt Amstelodami Sumptibus Societatis. [An Account of the Diseases, Natural History and Medicines of the East Indies. Translated from the Latin of James Bontius]. Cloth. Pp. 459, with illustrations. Amsterdam: Sumptibus Societatis, 1931.

This volume in the series of reprints of Dutch medical works, published by the *Nederlandsch Tijdschrift voor Geneeskunde*, contains the writings of Bontius on tropical medicine and natural history. M. A. Van Andel writes an interesting introduction about Bontius and his career, with bibliographic and other details. Jacobus or James Bontius, 1592-1631, became doctor of medicine in 1614 and practiced in Leyden ("plague-doctor" in 1624-1625) until he was appointed doctor, apothecary and surgical inspector in the Dutch East Indies in 1626. He arrived in Batavia in September, 1627, and died, Nov. 30, 1631. During this brief but strenuous period he made for the first time "a more or less methodic survey of the principal diseases to be found in the Indian Archipelagio" and wrote in Latin an account of his medical studies as well as of botanic and zoological observations. This work is now reproduced in Latin text with English translation. In 1769 the first four books were published in London under the title "An Account of the Diseases, Natural-History and Medicines of the East Indies. Translated from the Latin of James Bontius, Physician to the Dutch Settle-

ment at Batavia." This translation, which is evidence of the importance attached to the work at that time, is used in the volume under consideration; books 5 and 6, which deal with animals, plants and spices, have been translated by A. Quiredo. The third and fourth books constitute a pioneer work on tropical medicine. The first chapter of the third book gives perhaps the earliest detailed description of beriberi. Dysentery—from which Bontius himself was a sufferer and which he regarded as infectious in nature—consumption, cholera, empyema, jaundice, abscess of the liver are some of the other topics considered. In all cases, directions for treatment are given. In connection with empyema and abscess of the liver, precise surgical treatment is described. Frambesia is described clearly and as resembling the "venereal disease" but differing in being produced "without any venereal embrace." Book 4 is entitled "some select observations taken from the dissection of dead bodies, and tending to throw light on the diseases above [book 3] treated of." Here are described concisely postmortem observations on meningitis, empyema, fracture of the skull, "a chronic and complicated disorder," on a man "in whom the vena cava was filled with a fat and medullary substance," abscess of the liver ("on opening the body, we found nothing of the liver but the membrane surrounding it, pretty thick like a sack, in which was still a little sanious matter resembling the water wherein flesh had been washed, and such as he had spit up for a long time"), on a person who died of a wound in the breast, etc. The last was obviously a medicolegal necropsy because of the statement "we opened the body in the presence of the magistrate." These records clearly establish Bontius as a pioneer student of morbid anatomy in the tropics. Under handicaps and difficulties of which we can form no adequate idea, Bontius in less than four years carried on a work the results of which place him among the founders of tropical medicine. He is an honor to Dutch medicine and abundantly entitled to the great distinction of the reissue in new form of his works three hundred years after his death.

The Sexual Side of Marriage. By M. J. Exner, M.D., Consultant of the Division of Educational Measures, the American Social Hygiene Association. Cloth. Price, $2.50. Pp. 252. New York: W. W. Norton & Company, Inc., 1932.

This or a similar book might well be in the possession of every couple contemplating marriage or having any sort of difficulty in making such sexual adjustments as may be essential to a well balanced and satisfying marital life. The book is well written. It is interesting without being in the least morbidly stimulating. It is easily understood without being in the least juvenile. It is scientific. The author has succeeded in doing well a task that has rarely been accomplished. The subject matter is treated in a straightforward manner and in language that leaves little to the imagination. Proper attention has been given to the emotional side of sex life and, indeed, the whole book is on a high mental, emotional and moral plane. The book is recommended to the physician who wants a book that may be trusted in the hands of his young people or of older couples with sexual maladjustments.

Arbeiten aus der dritten Abteilung des Anatomischen Institutes der Kaiserlichen Universität Kyoto. Herausgegeben von Prof. Dr. Seigo Funaoka, Vorstand der Abteilung. Serie C: Experimentelle Tuberkuloseforschung, Heft 2. Paper. Pp. 108, with illustrations. Kyoto: Anatomical Institute of Kyoto Imperial University, 1931.

The papers collected in this publication form the experimental justification for the treatment of tuberculous patients with "yatoconin." Funaoka and his school found a phosphatase and a pyrophosphatase in tuberculous tissue; they show that it is identical with the phosphatase that Robison discovered in ossifying cartilage. If a rabbit, infected with human tubercle bacilli, is given an intravenous injection of calcium diethyl phosphate, the phosphatase causes deposition of calcium phosphate in the tuberculous lesions. Injections of calcium levulose monophosphate ("yatoconin") were given to eighty patients with enlarged cervical lymph nodes. In from 8 to 12 per cent of the cases the nodes remained stationary; the remainder showed varying degrees of improvement after from fifteen to thirty injections. Good results are claimed for this treatment, even when it does not result in calcification. Funaoka expects to publish a third volume, which will give more clinical data. No opinion can be formed of the value of this treatment at the present moment.

Intracranial Tumors: Their Pathology, Symptomatology, Diagnosis and Prognosis. By Cyril B. Courville, M.D., Resident Neurologist, Los Angeles County General Hospital, Los Angeles, California. Fiske Fund Prize Essay, No. LXIV. Cloth. Price, $2.50. Pp. 158, with 33 illustrations. Providence: Fiske Fund Essay, 1931.

This little book, the Fiske Fund prize essay for 1929, is a rather elementary discussion of the subject. Part II, concerning the pathology of brain tumors, is a summary of recent American work, accurate in the main, although those who do not agree that neuroblasts play any part in the development of the tumor ordinarily known as spongioblastoma or glioblastoma multiforme would object to the coinage of a new term for this tumor. Part III, concerning the symptomatology of tumor of the brain, is original in that the author discusses single symptoms rather than the symptomatology of the regions of the brain, as is usually done. He is not consistent, however, for along toward the end of this part he discusses the symptomatology of the cerebellum as a whole rather than individual symptoms which may or may not arise from the lesions of the cerebellum. In part IV, concerning the diagnosis of brain tumor, the discussion of differential diagnosis is inadequate, and so also is part V, concerning the prognosis of brain tumors. Although the discussion is in the main accurate, and should be useful for students to read, the volume cannot be recommended as an adequate textbook on the subject.

Les urétrites chroniques: Diagnostic et traitement. Par R. Dossot, chef de Clinique Urologique à l'Hôpital Necker, et M. Palazzoli. Préface du Professeur Legueu. Paper. Price, 50 francs. Pp. 344, with 37 illustrations. Paris: Masson & Cie, 1932.

This book deals with one of the most troublesome chapters of urology, the care of chronic urethritis. The normal and pathologic anatomy of the urethra and its appendages is minutely gone into and on this exposition is based a rational diagnostic procedure. Particular stress is laid on the ocular inspection, and excellent colored plates illustrate the achievements of urethroscopy. The therapeutic part of this publication is complete according to the most modern standard. It is satisfactory to notice that the pertinent world literature is thoroughly considered. This monograph compares favorably with all the other publications dealing with these disorders.

A History of Smoking. By Count Corti. Translated by Paul England. Cloth. Price, $3.50. Pp. 296, with 64 illustrations. New York: Harcourt, Brace & Company, 1932.

Long before civilized man began to sacrifice at the altar of Madame Nicotine, smoke had been used by the Mayas and by various savages in their religious customs. Then Columbus discovered America, and white men had opportunity to observe Indian customs. The great Oviedo wrote, after observing smoking by the Indians, "I cannot imagine what pleasure they derive from this practice unless it be the drinking which invariably precedes the smoking." Count Corti traces the evolution of smoking from that time to the present day, calling attention particularly to the way in which it has influenced modern history. It has started social, economic and political revolutions and made many a martyr. The book by Count Corti is concerned wholly with these aspects of the subject and does not primarily concern its relationship to health. There were, of course, numerous occasions in which the battles which raged on the subject were given a health slant, but in most instances without any scientific evidence to support the arguments of the fanatics who defended either side of the subject.

Le spine bifide (Malformazioni congenite de fessure vertebrali). Per Prof. G. Jemma, libero docente e assistente di clinica ortopedica nella R. Università di Napoli. Paper. Price, 30 lire. Pp. 224, with 57 illustrations. Naples: La Pediatria, 1930.

Proceeding from definition, through historical considerations, embryology, morbid anatomy, etiopathogenesis, symptomatology, diagnosis, therapy and sequelae, the author gives a well rounded, objective presentation of the congenital malformations associated with fissures of the vertebrae. Personal observations on sixty-five patients are reported in detail, accompanied by numerous reproductions of photographs, drawings and charts. Although presenting little that is startling, the work is of value as a summary in the Italian language of the information to date. The bibliography is exhaustive.

Medicolegal

Quarantine of Patient Having Venereal Disease

(Ex parte Lewis (Mo.), 42 S. W. (2d) 21)

A St. Louis ordinance provides that every person arrested as a prostitute, keeper, inmate or frequenter of a house of ill fame be examined by a physician of the division of health. If the person examined is found to have a venereal disease in an infectious stage, he or she must be quarantined in the city hospital until no longer capable of spreading the disease. A woman arrested as an inmate of a house of prostitution was examined, found to be afflicted with syphilis and gonorrhea, and quarantined in the city hospital. She petitioned for a writ of habeas corpus to obtain her release. The parties to the suit agreed that the petitioner was lawfully quarantined if the ordinance under which she was confined was valid, and the only question before the court was therefore the validity of the ordinance.

No claim was made that the city did not have authority to legislate on the subject matter of the ordinance, but the petitioner contended that the ordinance violated the due process clauses of the federal and state constitutions. Laws and ordinances, said the Supreme Court of Missouri, prescribing regulations for the promotion of health and welfare are within the police power of the government and, if reasonable, they are not obnoxious to the due process clause of either the federal or the state constitution. This ordinance was adopted to protect and promote the health of the people. Being fairly within the police power of the city, it was held by the court to be not in violation of the constitutional provisions invoked by the petitioner.

The petitioner further contended that the ordinance was invalid because in violation of section 1 of article 6 of the constitution of Missouri, which prohibits the conferring of judicial power on an administrative officer. Apparently the petitioner contended that this ordinance undertook to confer judicial power on an administrative officer when it undertook to vest in the health officer power to determine whether or not a person arrested should be subjected to isolation and treatment. But, said the court, a power is not necessarily judicial within the meaning of the constitutional prohibition merely because the exercise of that power requires an investigation of the facts and the exercise of judgment within lines prescribed by the law which confers the power. This ordinance authorizes the health officer to determine whether or not a prisoner has a venereal disease in an infectious stage. Such authority empowers the health officer only to determine the facts on which the ordinance by its own terms operates. The determination of such facts is not the exercise of either legislative, executive or judicial power within the meaning of the constitution.

The petitioner finally contended that the ordinance violated the prohibition of the state constitution that provides that no person shall be prosecuted criminally otherwise than by indictment or information. Obviously, said the court, there is no merit in this contention, for the petitioner was not prosecuted on any charge. Isolation is neither a prosecution nor a punishment for the commission of a felony or misdemeanor.

The petition for a writ of habeas corpus was dismissed and the petitioner remanded to the custody of the superintendent of the city hospital.

Legal Test as to Charitable Character of Hospital

(William Budge Memorial Hospital v. Maughan, County Treasurer (Utah), 3 P. (2d) 258)

The William Budge Memorial Hospital claimed that its property was used exclusively for charitable purposes and by the provisions of the constitution of Utah was exempt from taxation. It procured an injunction restraining the treasurer of the county in which it was located from collecting taxes for the year 1928, which had been assessed on the real estate and buildings owned and occupied by the hospital. The county treasurer then appealed to the Supreme Court of Utah.

The test, said the Supreme Court, which determines whether a hospital is charitable or otherwise is its purpose; that is, whether or not it is maintained for gain, profit or advantage. 30 Corpus Juris 462. Here, the hospital was incorporated under the general incorporation laws of the state as a corporation organized for profit, with an authorized capital stock of $35,000, which later was increased to $50,000. The charges made for services were the standard hospital charges. No patient had ever been received against whom no charge was entered on the books of the hospital, except members of the hospital staff and their immediate families. The hospital, in 1927, had an undivided profit of $31,000 and had paid the debt incurred in constructing and equipping the main building. Considering these facts, said the court, the conclusion seems inescapable that the hospital is an enterprise for pecuniary profit and its property is not exempt from taxation.

The hospital contended, however, that it was never carried on for pecuniary profit, since no dividends were ever declared or paid. The fact, said the court, that the managing directors of the hospital deemed it advisable to permit its earnings to accumulate and to use such accumulations for additional buildings and equipment, rather than to pay them out as dividends, is not indicative of either a benevolent or a charitable purpose. It often is in line with sound business principles to withhold dividends and to convert the money into increased facilities. Certainly, every stockholder is pecuniarily benefited. His holdings in the corporation are enhanced in value. A management following such a policy might, in the course of years, after the plant had increased in value because it was not burdened by the payment of taxes, be able to dissolve the corporation to the profit of all the stockholders. Furthermore, the stockholders might at any time invoke the court against arbitrary and unreasonable conduct on the part of the board of directors in accumulating a surplus in violation of their rights to the profits of the corporation. There is not a single feature, said the court, marking the plaintiff as a charitable institution.

The judgment of the trial court enjoining the county treasurer from collecting the taxes was reversed.

Revocation of Physician's License; Ground for Revocation May Be Stated in General Terms.—"The rule obtaining in the majority of the jurisdictions which have passed on the question is that a statute providing that the license of a physician, surgeon, or dentist may be revoked by the officers or board by which such licenses are granted, is not rendered uncertain or otherwise invalid because the grounds for revocation are therein stated in general terms." 5 A. L. R., 94. "As there is no real distinction between refusing and revoking a license, the same body which may be vested with power to grant or refuse to grant a license may also be vested with the power to revoke it. . . . The board is not bound by the ordinary rules of procedure or evidence that apply in a court of law or equity. Even though there is given no right of appeal from the decision of the administrative board, the federal constitution is not violated, for the right of appeal is not essential to due process of law." 21 R. C. L. 366. A statute authorizing the board of health of the territory of Hawaii to revoke a physician's license because of "gross carelessness and manifest incapacity" is not unconstitutional. To charge a physician with "professional misconduct and gross carelessness and/or manifest incapacity as a physician" gives him due notice of the charge that he is called on to defend. There is vast difference between "unprofessional and dishonorable conduct," a phrase sometimes found in statutes of this nature, and the term "gross carelessness and manifest incapacity." The former relates to professional ethics and the personal conduct of the physician, while the latter relates to the physician's method of treatment and the degree of care exercised in the treatment of the patient, and to the physician's skill or capacity properly to diagnose and treat such patient—terms that seem to have a well defined meaning both in law and in the medical profession.—*Yoshizawa v. Hewitt (U. S. C. C. A.) 52 Fed. (2d) 411.*

Physician's Liability to Patient for Performing Criminal Abortion.—The plaintiff sued the defendant physician to recover damages for alleged injuries resulting from an abortion which he performed on her. On her testimony that the defendant performed the abortion at her request, the trial court directed a verdict in favor of the physician. The court of appeals affirmed the judgment and the plaintiff petitioned the

Supreme Court of Tennessee for a writ of certiorori. According to the great weight of authority, said the Supreme Court, the interruption of pregnancy has always been regarded as highly offensive to good morals and injurious to society. As a general rule, no court will lend its aid to one who founds his cause of action on an immoral or an illegal act. In cases of this character the application of the rule is to be determined on considerations of public policy. Where the abortion is committed with the consent of the female, she should not be permitted to invoke the aid of a court, even though she is not regarded by criminal law as an accomplice to the crime. Here the plaintiff well knew the serious consequences likely to result from such an operation and that it was both illegal and immoral. In these circumstances, certainly, she is entitled to no relief. The Supreme Court refused to disturb the judgment of the court below, in favor of the physician.—*Martin v. Morris (Tenn.), 42 S. W. (2d) 207.*

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Miles City, July 13-14. Dr. E. G. Balsam, 208 North Broadway, Billings, Secretary.

Western Branch of the American Urological Association, Portland, Ore., July 1-2. Dr. F. S. Dillingham, 548 S. Spring Street, Los Angeles, Secretary.

Wyoming State Medical Society, Rock Springs, July 18-19. Dr. Earl Whedon, 50 N. Main Street, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-Seventh Annual Meeting, held at Atlantic City, N. J., May 3 and 4, 1932

(Continued from page 2316)

The Effects of High Protein Diets on the Course of Chronic Glomerulonephritis

DRS. WILLIAM S. MCCANN and E. H. KEUTMANN, Rochester, N. Y.: Dr. McCann: Diet for patients with Bright's disease is frequently limited as to protein intake, with the exception of cases of lipoid nephrosis. Liberal protein is supposed by many to be injurious in Bright's disease. This question has given rise to much controversy. Experimental work on animals has shown that unusual amounts of protein have been given to animals in whose dietary it is unnatural. Interference with normal dietary habits of animals has been found to produce hematuria. In rabbits, high protein has been injurious only when green leaves and vegetables have been omitted from the diet.

In the early work of Newburgh and his collaborators on men, injury was produced by feeding liver (rich in nuclear substance) instead of beef muscle. Newburgh also produced hematuria by administering sodium nucleate.

Our studies of this question have covered both the intensity and the quantity factors in the pathologic process in Bright's disease. We used the method of Addis for intensity estimation and the urea clearance method of van Slyke for quantity. The subjects were four young men aged from 15 to 25 years. All were observed in the acute onset or exacerbation of hemorrhagic Bright's disease. One was in the chronic latent stage and three were in the chronic active stage. Observations extending over a year were made, during which time the diet contained about 75 Gm. of protein. The increase of the protein allowance to 200 Gm. a day for one week resulted in no ill effects. Encouraged by this result, we gave liberal protein allowances for longer periods. The process subsided in intensity throughout the period of liberal protein allowance, during the last two weeks of which liver was substituted for beef muscle as a source of protein. In the boy of 15 years, thus treated, there was no edema; the blood pressure remained normal throughout. Azotemia was increased during the higher protein periods. This is accounted for in part by the fact that it was necessary to limit fluid ingestion in order to carry out the sediment counts according to the technic of Addis. Even with this limitation, the highest value for nonprotein nitrogen observed was 45 mg. per hundred cubic centimeters and for urea 21 mg. per hundred cubic centimeters. The degree of positive nitrogen balance increased during liberal protein diets. During this period the values for urea clearance showed a tendency to increase. Similar results were noted in the other three patients; an increase in weight noted was not due to edema. Proteinuria tended to increase with an allowance of 150 Gm., but hematuria did not increase.

These observations led to the conclusion that patients in the latent or chronic active stage of hemorrhagic Bright's disease may be given diets containing from 75 to 80 Gm. of protein a day without adverse effects. In two cases an increase in proteinuria was noted when 150 Gm. a day was given, but in spite of this the renal function, as measured by the urea clearance, was not decreased. The hematuria was not increased and the renal function as measured by blood clearance improved; the blood pressure remained within normal limits and the patients improved clinically when a liberal allowance of protein was given in the diets.

Treatment of Subacute Hemorrhagic Nephritis with Streptococcus Nucleoprotein Vaccines

DRS. CLIFFORD L. DERICK and JAMES P. O'HARE, Boston: Infection is found to be usually an important factor in the production of nephritis, particularly streptococcus infection. The studies of Longcope have emphasized this point. Hemolytic streptococci have been isolated from the throats and sinuses in these patients. The toxic filtrates of these bodies, when injected into the skin, produce a reaction similar to the Dick toxin. In our studies we submitted 670 patients to the skin test. We found the percentage of reaction greater in nephritic patients than in the average type. Our present study covers 67 patients. Eighty-three per cent of these gave reactions, of which 50 per cent were in nephritic patients. One of us (O'Hare) has called attention to the inadequacy of treatment other than rest and diet. Therefore an attempt was made to immunize some of these patients. An antitoxin made of the nucleoprotein products of streptococci was used, because it was found that patients become allergic to these products. The intravenous route was used for vaccination. The dosage had to be very carefully computed, as in patients with rheumatic fever. The attempt was made to avoid any general reaction or reaction in the urine, but the latter could not always be avoided. Sometimes albuminuria occurred. Patients were desensitized to the type of nucleoprotein to which they were most sensitive. They were followed as long as thirty-nine months and only two returned to the sensitive stage. Some patients are sensitive to a green streptococcus and some to the hemolytic streptococcus. Two patients were sensitive to both types. It was not easy to get desensitization to the green variety. Some of the patients used to have repeated colds, and of these five have had no recurrence of colds, and in others colds have been much fewer. Three cases were unsatisfactory. All these were chronic cases. This disease is definitely related to infection of the upper respiratory tract, and the streptococcus is the active agent. The patients can be definitely desensitized by the streptococcus nucleoprotein. No unfavorable results have been noted from the use of the vaccine, and the majority of patients have reacted favorably. It is therefore another useful method in our armamentarium.

DISCUSSION ON NEPHRITIS

DR. GEORGE BAEHR, New York: Much clinical observation suggests the conception of the causation of a glomerulonephritis. It is well known that the onset of an acute glomerulonephritis of scarlet fever occurs during the second week of convalescence. A number of years ago I had the opportunity of pointing out that true diffuse glomerulonephritis is rarely observed as a complication of the persistent streptococcemia of subacute bacterial endocarditis, whereas the incidence of the complication in patients with this disease, who have killed off their bacteria and become bacteria free, is even higher than after scarlet fever. Last year before this association I reported ninety-six cases of subacute bacterial endocarditis in which an anhemolytic streptococcus was persistently present in the blood stream through the long duration of the disease, and only twice was diffuse glomerulonephritis observed at necropsy, one

instance being of doubtful significance. On the other hand, of fifty-nine patients who had successfully killed off their bacteria in the blood and vegetations early in the disease and who were observed in the bacteria-free stage of the disease, nineteen died of uremia as a result of a complicating diffuse glomerulonephritis, an incidence of over 30 per cent. Recently I had occasion to review fifty cases of Streptococcus hemolyticus bacteremia, and in not one instance was a diffuse glomerulonephritis found post mortem. It is therefore obvious that neither the presence of a hemolytic or a nonhemolytic streptococcus in the blood stream nor the excretion of their toxins by the kidney can be the cause of diffuse glomerulonephritis. The diffuse glomerular damage that follows streptococcal infections must be the result of phenomena concerned in recovery from infections.

D. D. VAN SLYKE, New York: I am interested in the work of Drs. McCann and Keutmann on the desirability of generous protein feeding in hemorrhagic nephritis. This fact in hemorrhagic nephritis as well as in degeneration nephritis has been confirmed by our studies at the Rockefeller Institute. We were cautious in giving generous protein diet to patients with decreased renal function, but as we have gained more experience we have found that it is desirable to use high protein to maintain the tissues in a state of good nutrition, but we kept the plasma proteins at such a level that the patients would not be edematous. At the present time I am inclined to think that there is no justification in keeping the proteins low in the diet of nephritic patients because of their nephritis. Our aim should be to keep up their nutrition and to disregard the fact that they have nephritis. We have found that the patients are in good shape until they fall into the hands of some physician. Patients often come to us with 10 or 15 per cent of renal function and in a fairly good state of health and continuing to work. They hardly realize they are ill. These patients are the ones who have had the good fortune to escape being dieted.

DR. HERMAN O. MOSENTHAL, New York: One word as to this conclusion. Such a diet has been used, and the patients ate from 50 to 75 Gm. of protein readily; but if the protein was raised beyond that point difficulty arose because patients could not consume with comfort larger amounts of protein. Consideration of the situation shows that a great error has been made in treating the kidneys solely. The kidneys are not necessarily damaged by proteins. Drs. Christian and Bartram observed that they could benefit the situation when they produced albuminuria by diuretics. As far as proteins in all types of Bright's disease are concerned, they diminish edema and prevent pneumonia. They do not change renal function; but one has to be on the lookout that in extreme cases the renal function is not overtaxed. With the exception of producing uremia, a high protein diet would be of benefit rather than harm.

DR. WARFIELD T. LONGCOPE, Baltimore: Reactions with injections have occasionally been obtained from patients. One ought to see how often these reactions occur and how serious they are. In tonsillectomy or in sinusitis there may be reactions showing red blood cells in the urine. This reaction usually subsides without doing any harm.

D. D. VAN SLYKE, New York: I do not want to give the impression that every patient has received a high protein diet. Some get 60 Gm., some 75. Unless the patient is given whatever he can take with comfort, difficulties in his general condition arise. One must take into account his digestive ability and general reaction and give him as much as he can take care of, to keep up his general nutrition, allowing for the fact that his renal function is subnormal.

DR. JAMES S. MCLESTER, Birmingham, Ala.: A more intimate knowledge of the pathology of both acute hemorrhagic nephritis and chronic degenerative Bright's disease, particularly as regards the ensuing plasma protein deficit, would indicate that in both forms of nephropathy the patient should be given diets containing liberal amounts of protein; in the former disease 100 Gm. daily, in the latter even more. Experience has shown that such an allowance facilitates recovery. In nephrosclerosis different conditions obtain, but even here there is no reason for rigid protein restriction and in order to maintain the patient's strength and vigor for the longest possible period the diet should be fairly liberal; it should provide approximately 75 to 100 Gm. of protein daily.

DR. WILLIAM S. MCCANN, Rochester, N. Y.: We do not consider very high protein diet as the optimal. I think the average patient can rarely take more than 100 Gm. with comfort. In some conditions the patient does well on a low protein diet. The effect of protein feeding on animals is worth consideration. Our studies have covered cases with the nephritic syndrome. The effect of high protein on the necessity for acid excretion must not be lost sight of. The excretion of phosphates, sulphates and acid must be considered, and the capacity of the kidney for acid base excretion must be taken into account. Our cases were in a state of subsidence from acute attacks. They were not in the early chronic active stage.

DR. CLIFFORD L. DERICK, Boston: In reply to Dr. Longcope, these patients frequently have an upset after tonsillectomy. We were able to give small doses and felt our way along. We could give about 10,000 at first. In regard to the number of treatments, we gave twelve to desensitize a patient, as far as the skin test shows desensitization.

Filtrable Forms of Bacteria and Their Significance

ARTHUR I. KENDALL, PH.D., Chicago: Almost exactly fifty years ago, Robert Koch announced the isolation and cultivation of the tubercle bacillus and demonstrated its relation to tuberculosis. Most important of all, he gave to medicine a method whereby a considerable number of bacteria could be studied in the laboratory and their relations to infectious diseases established. Improvements and refinements of method led directly to the discovery of other microbic incitants of infection, and for three decades the surge of discovery swept on. A time came, however, when there emerged from the multitude of microbic infections a formidable, heterogeneous group of diseases whose inciting agents resisted the most painstaking efforts of the laboratory. The members of this heterogeneous group failed to develop in the traditional culture mediums even when they were enriched with body fluids or bits of sterile tissue. The classic procedure of Koch had apparently reached a limit in its usefulness.

Exanthems, influenza, the common cold, certain types of arthritis, rheumatic fever and endocarditis, to mention but a few members of this group, exhibit in common three important characteristics: their inciting agents are invisible, unstainable and uncultivable in laboratory nutrient mediums thus far available. In endeavoring to discover the reason for current failure to cultivate the causative agents of these diseases, several of which are said to be filter-passing organisms, one is impressed by an important difference between the natural habitat of these bacteria in the body, and the character of the artificial medium in which their cultivation is attempted. In the body, the organisms are living in a protein environment of exquisite specificity and complexity; in the test tube, denatured protein (peptone), with or without enrichment, is offered to them. The difference between the body protein and the peptone of the laboratory mediums is really very great. Some conception of this difference may be gained when one contemplates the remarkable host specificity manifested by the virus of smallpox, for example; and some idea of the intricacy of this host-microorganism complex may be had by a consideration of the changes in virulence brought about when the human smallpox virus is modified in its virulence by passage through calves to produce vaccine virus.

If these observations are correct, it would seem reasonable to depart from the traditional peptone mediums and to offer to the refractory tissue parasites a pabulum more nearly in keeping with their natural nutritive environment; in other words, to make use of a protein-rich, peptone-poor medium in an attempt to induce them to grow outside the animal body. Such a medium (K medium), very primitive and greatly in need of refinement, has been devised. Through its use a certain amount of information has been gleaned which would lead us to hope that at least some of the problems relating to the etiology of the heterogeneous, refractory group of diseases under discussion may be more closely scrutinized. At present,

the medium referred to is made from the intestines of hogs, which are first extracted with alcohol and benzene and then dried. This extracted, dried intestinal residue is immersed in Tyrode solution of proper reaction and sterilized in the autoclave. It is then ready for use. The medium falls far short of the ideal in many respects and is certainly a very poor substitute for the exquisitely specific and complex protein architecture of the tissues in which the organisms sought for are accustomed to grow; but, uncertain and crude as it may be, the hog intestine medium does seem to support the growth of organisms which have hitherto appeared to be uncultivable. To this extent it has justified itself. In it, certain bacteria, as Bacillus typhosus, have been rendered filtrable, and in the filtrable state these forms have been kept alive for several months. In this filtrable state the typhoid bacillus is invisible, unstainable, and uncultivable in ordinary mediums, and to this extent it has distinct relationship to the filtrable organisms in the body. Finally, typical typhoid bacilli, agglutinable with specific typhoid serum and having the proper morphology, staining and fermentation reactions, may be recovered from this filtrable organism. From these observations it would appear that it is logical to infer that bacteria, growing in the tissues, in the presence of protein and in the absence of peptone (unless pus formation occurs), might also be in the filtrable state invisible, unstainable and uncultivable in ordinary peptone-containing mediums. Evidence is available which indicates that such may be the case.

Observations on filter-passing and non-filter-passing bacteria in the urine seem to indicate that bacteria may exist in the body in the filter-passing state; that these bacteria in the filter-passing state are not stainable, not distinctly visible under the microscope, and not directly cultivable in ordinary nutrient laboratory mediums; that at least some of these bacteria in the filter-passing state are directly cultivable in a crude protein medium (K medium) and after development in this medium through repeated transfer they may be recovered eventually in a visible, stainable state, cultivable directly in ordinary nutrient laboratory mediums, and that these bacteria in the visible, stainable, cultivable state do not pass the pores of certain Berkefeld filters. Attention is drawn to the fact that there is a considerable group of micro-organisms growing in the tissues of the body which are not stainable, not distinctly visible under the microscope, and not directly cultivable in ordinary nutrient laboratory mediums. They are, or may be, filter-passing organisms. It is suggested from these analogies that at least certain of the micro-organisms now classified in this indefinitely defined group of "viruses" may be bacteria in the filter-passing state. The isolation and cultivation of bacteria from the urine in the filter-passing state opens up new problems of importance, both to clinical medicine and to public health. It is quite possible that typhoid, paratyphoid and other bacteria may thus escape from the body and with current laboratory methods escape detection. The relation of humoral and cellular forces of the body to bacteria in the filter-passing state is brought to the fore; nothing definite can be predicted at the present time, however.

DISCUSSION

DR. HANS ZINSSER, Boston: I have taken great interest in this problem since Dr. Kendall's first paper appeared. The subject is so fundamentally important that a correct solution must be sought by all bacteriologists. In attempts to follow the work in our laboratory, Dr. Kendall has sent us specimens of his medium. If his surmise is correct, the entire structure of our attitude toward the biology of disease must be changed. It is almost as important as the theory of spontaneous generation, and nothing short of absolute proof should be accepted or we may risk making research even more difficult than it already is. In following Dr. Kendall's work, my associates Dr. Seastone and Miss Blumer have come to believe that the medium does not consist of unchanged protein, as stated by Dr. Kendall. The material is treated with alcohol and benzene for considerable periods, and it is reasonable to assume, therefore, that the protein is altered. The protein is certainly changed as regards solubility. We cannot get it back into complete solution, and many of the tubes show considerable turbidity. Also, because of the varying amounts of insoluble material in individual tubes, the titer of such tubes varies within the same lot. In his report today, Dr. Kendall has not gone further than he had when his first paper was printed. If his conclusions are correct, he has brought about a revolution in bacteriology, but we do not believe that he obtained the organisms from the filtrate after repeated invisible cultivation in the K medium. In his report today, he did not state that he had recovered the original organism. Errors of sterilization are hard to avoid with a medium of this kind and filtration itself is a complicated process. We have found the Kendall material a much poorer one than ordinary broth. In regard to filtration, difficulties may occur dependent not only on reaction and on the grade of filters and the negative pressure but also on the nature of the medium in which the organisms are subjected to filtration. It may be said that there is no measure of a filter except filtration itself, and the permeability of filters varies individually. In our laboratory some years ago Dr. Grinnell found that if old cultures were filtered in broth suspensions under proper control, almost all our filters would let through bacteria which did not come through in salt solution suspensions. Also, control cultures from filtrates would often show growth only after eleven or twelve days' incubation. We interpret this as a result of the passing through of bacteria or bacterial fragments, and not as cyclic changes. If a divided earthworm can regenerate to some extent, why should not fragments of bacteria, which divide by amitotic reproduction? Under particular conditions most bacteria can, in this way, pass through filters. To prove Dr. Kendall's thesis we must hold ourselves to certain postulates which we have published. We must filter a pure culture through a filter which holds back the original organisms and obtain signs of growth of the invisible forms in the special medium. The original organisms should not appear in the filtrate cultures after incubation of two to three weeks, if cultures are made on mediums suitable for the species of organism used. The invisible forms must be carried along for several generations. It must be possible to recover the normal forms after successive invisible generations by ordinary methods. We must not under any circumstances confuse the mere passage through filters of occasional bacterial cells with a filtrable cycle of bacterial life history. I wish Dr. Kendall's surmise were true and could be proved, but at present it is dangerous for the progress of bacteriology to accept this work until it has been satisfactorily demonstrated. This theory must not be accepted until it can be as rigidly proved as was the nonexistence of spontaneous generation. As to the supposed relationship of the filtrable forms to the filtrable viruses, that question is a still more complex one. I shall let Dr. Rivers speak on that point. I believe that there is a fundamental difference between the filtrable virus group and bacteria in physical characteristics, in pathology, in immunology, and in the clinical manifestations of the diseases to which they give rise. In conclusion, I feel that, as far as I can see, there is no fulfilment in Dr. Kendall's work of the criteria by which alone the correctness of his surmise can be demonstrated. We must continue to demand rigid proof and try to show ourselves wrong before we can accept these theories to be correct.

DR. T. M. RIVERS, New York: Dr. Kendall's ideas are interesting. The idea, however, that filtrable stages occur in the life cycle of bacteria is old. The idea that this represents a virus is not a recent conception. Nicoll, Kraus and others have advanced these theories. Dr. Kendall has used a new medium. This is of particular interest because the K medium is suggested as being suitable for the cultivation of a virus. There are two problems to be considered. Does the K medium show that bacteria have filtrable forms? Do the filtrable forms of bacteria represent poliomyelitis, vaccinia, and so on? Is this medium suitable for their cultivation? The K medium seems to me to be starvation diet for bacteria. Does a starvation diet cause the nonfiltrable bacteria to become granular, pleomorphic and filtrable? Does the diet change the ordinary characteristics? Another problem is the relation of filtrable forms of bacteria to virus. No one has brought convincing evidence that filtrable virus exists in the absence of living tissue. This suggestion was tested in regard to vaccine and to infectious myxomatosis of rabbits. A meat infusion was made of peptone broth with inoculation of the virus, incubated at 30 and at 37 C. Serial transfers of the cultures were

made to fresh mediums. Titer was established by animal experimentation. Multiplication of the broth virus occurs with bits of living tissue but not in any of the other mediums. After a second transfer the virus was reseeded in meat infusion, peptone broth and then in K medium. Dr. Kendall says it is invisible in K medium. I tested this. I attempted to make highly active material, free from bacterial contaminations. After cultivation for two weeks, examination for minute colonies of bacteria gave no evidence of any kind of organism. From the results of this work and the analysis of Dr. Kendall's there is no reason to suppose that the K medium will support the virus or that its use will shed light on the particular agents.

DR. WILLIAM H. WELCH, Baltimore: However erroneous the interpretation may be of these theories, the fact remains that the observations of Dr. Kendall mark a distinct step forward. As Drs. Zinsser and Rivers have pointed out, bacteria may form granules. That is a very old observation. Perhaps the greatest discussion was in connection with the cholera bacillus. They never determined whether granules were carried in the living bacteria. Dr. Kendall has brought evidence that the much discussed granules (from the disintegration of the cholera or comma bacillus) are capable of growth. This was never done before. Therefore this observation marks a distinct advance in knowledge.

ARTHUR I. KENDALL, PH.D., Chicago: The K medium is crude. That is beyond question. If I understood Dr. Zinsser correctly, he said that I had not recovered the organism in the urine after the filtration. Perhaps I did not make myself clear on that point. I did get the staphylococcus and the streptococcus back. The staphylococcus was a characteristic one, and the streptococcus before and after the filtration was the same kind, as judged by fermentation reactions, as the one observed in the filtrable state. This seemed to show that the bacteria had been passed through the filters and then got back again to the original state in which they were filtrable and suitable for cultivation. I did not mean to raise a comment about filtrable virus. Apparently Dr. Rivers has succeeded where Dr. Zinsser was unsuccessful. I have in the laboratory a culture of typhoid bacilli that was passed through the filter, November 2; this has been in K medium up to March. It grows slightly but distinctly in the medium and it is possible to bring it back to the typhoid bacillus state, but it cannot be stained by any stain or cultivated in ordinary medium and it is invisible under the microscope. I have been interested in bacteria many years. I have been playing with them for about thirty-two years. I am not surprised that a great many have not succeeded in reproducing these things I have told about. The phenomena are different from anything I have seen before. These organisms have to be coaxed back. They have lost the ability to grow in ordinary laboratory mediums. Whether these forms that do pass filters grow in these conditions, whether they do, or do not, fulfil all the criteria as we know them of what filter-passing organisms are, is, I think, probable. For fifty years bacteria have been rather a puzzle, and we are not yet in a position to state definitely what science has failed to reveal to us in all this long time. In regard to the question of priority, which has been raised, that bacteria may pass filters is a modern idea; but if you want to know the original man who discussed the possibility of germs existing in two forms, read Lucretius, who in 50 B. C. wrote of germs existing in two states, one of which was insoluble.

Experiments on Active Immunization in Poliomyelitis

DR. SIMON FLEXNER, New York: This topic is not new. Experimental active immunization in poliomyelitis has been known since 1910. What I have to say relates to extension and modification of experiments that have been made in the intervening years. There is no doubt that the epidemic of 1930 has added stimulus to experimental work. The virus was obtained from human cases of 1909, the so-called mixed virus of the Rockefeller Institute, which is nearly 25 years old. It has been passed through monkeys for twenty-five years. The monkeys are inoculated intradermally. The animals develop a high immunity. Of four inoculated, all but one came through without symptoms; one developed symptoms and recovered. Two types of immunization were tried; a constant virus was tested against a varied serum, the latter a large amount. Then four animals which showed no symptoms were sprayed daily with instillations of virus in the nares, which is an effective way to introduce the disease. Without any lesion of the mucous membrane, all four animals developed fatal poliomyelitis. This virus has been permanently modified. It is immunologically not identical with the human strain, but it is not completely different. A type of virus from New South Wales, from patients' serum, is different from the American virus. Some doubt arises, therefore, whether active immunization is possible or desirable. Another question is whether it is possible to produce active immunity in monkeys. Immunity can be raised by injections given to recovered monkeys of a reinforced monkey serum, that is, a glycerolate of cord emulsion. This is the method of immunization of swine against hog cholera, and protecting dogs against distemper.

We have also tried to modify the virus so that it can produce immunity without causing paralysis. These experiments have to be carried much further. Not every batch of the material shows either antigenic purpura or infectious purpura, but if one can determine some degree of infectious purpura, that material in the skin of monkeys will give rise to immunity. It is an expression of neutralizing antibody giving resistance to intranasal injection.

It is certain that the virus passed through many monkeys has altered. It is more effective for monkeys. We cannot tell whether it is more effective for human beings. The next step will be to see whether it is more or less effective for anthropoids. Plenty of human volunteers are available but I think we are some distance from that yet.

The Early Use of Convalescent Serum in Poliomyelitis, Before Paralysis Has Developed: Comparison of Treated and Untreated Cases

DR. WILLIAM H. PARK, New York: This study was a cooperative effort of the department of health, the department of hospitals, and a committee of the Academy of Medicine, to make potent convalescent serum available for therapeutic use, and, if possible, to evaluate the results. The cases were first reported to the health department laboratories; then the patients were visited by an experienced diagnostician. If the case seemed suspicious, spinal fluid was removed and sent by messenger to the research laboratory. If the diagnosis was confirmed, the patient was either sent to one of the hospitals, or was quarantined at home. If the family physician desired to have convalescent serum administered, one of the pediatricians from the Academy of Medicine was summoned. The average age of the treated group was about 6.5 years, and of the untreated group about 5.5 years. The average time of the administration of the serum was 1.6 days after the first meningeal symptoms. There was no definite indication that earlier treatment as compared with later treatment reduced the consequences. The antipoliomyelitis horse serum produced excessive meningitis when given intraspinally.

Observations on Poliomyelitis, with Particular Reference to So-Called Abortive Poliomyelitis

DRS. JOHN R. PAUL and JAMES D. TRASK, New Haven, Conn.: Epidemiologic studies on poliomyelitis, made in New Haven during the summer of 1931, indicate that cases of so-called abortive poliomyelitis may be of greater numerical importance than has hitherto been suspected. Our attention was primarily directed to this fact during the recent local epidemic by the appearance of many examples of mild illness characterized by signs of a general infection, such as fever, headache, vomiting or perhaps sore throat, but not by signs of meningeal or myelitic involvement. Such minor illnesses recall the picture originally described by Wickman to designate his "abortive types" of poliomyelitis, and they also reflect Draper's concepts of the first phase of the so-called dromedary form of the clinical disease, which, he believes, probably occurs more often alone than otherwise. As present usage of the term "abortive poliomyelitis" is ambiguous and is employed by some to designate those cases in which signs of meningitic and myelitic involvement are present but in which no paralysis develops, we have employed instead the term "characteristic minor ill-

nesses in association with poliomyelitis." In our study of 222 families from each of which one or more cases of frank poliomyelitis had come, it was found that these minor illnesses developed in about 40 per cent of these patients' siblings (under the age of 15 years) more or less contemporaneously with the appearance of a frank case within the family. Control families showed a 10 per cent incidence of these minor illnesses among children of the same age during the epidemic period. The age distribution of those attacked with minor illnesses was quite similar to those attacked by frank poliomyelitis. In a study of three communities, during the local epidemic, the incidence of these minor illnesses proved to be about six times that of the frank cases of poliomyelitis.

Twelve attempts were made to isolate the virus of poliomyelitis, by the monkey inoculation test, from the throats of patients with characteristic minor illnesses on various days of the disease. Two of these attempts were successful. The virus was obtained from a single attempt made on the first day of a minor illness and in one of four attempts made on the second day. Four attempts to isolate the virus from the throats of healthy contacts proved negative.

The observations bring further evidence to bear that mild and unsuspected examples of poliomyelitis may be of major import in the spread of this disease.

DISCUSSION ON POLIOMYELITIS

DR. SIMON FLEXNER, New York: My personal experience is wholly with the experimental disease in monkeys. There the use of immune serum does make a difference. As between human beings and monkeys, the conditions are not identical; but the advantage is in part with the human beings. The more inclusive the cases recognized as preparalytic poliomyelitis are, the higher is the proportion that escape detectable paralysis. Probably, in part at least, the lower mortality of the epidemic of 1931 is accounted for by the greater skill in diagnosis. There is therefore an inherently effective agency at work in aborting poliomyelitis in man. This agency is far less effective in monkeys. The experimental disease in these animals is rarely abortive (although many resist weak, unadapted virus strains), but it tends to be far more severe and fatal in monkeys, which do not have the uninoculated disease, than in man, who does. The severe form of experimental disease in monkeys can be prevented or mitigated by means of immune serum. Since the practice of medicine is applied to individual cases of disease and does not, except statistically, deal with disease in mass, the question may fairly be asked whether the preexisting mechanisms in man tending to confine and abort the virus infection cannot be supplemented and fortified by convalescent serum in some instances, I do not think this question can now be answered in the affirmative, and I equally do not believe that it can be answered in the negative. It is generally agreed that the use of human convalescent serum does no harm. Since it cannot be affirmed that, in an individual case, it does no good, should its use be withheld? That is a question to be answered not by the pathologist but by the practitioner. If a better, more calculable, method of preventing the paralysis were known, that is, a surer way of supplementing the normal mechanism which tends to restrain the action of the virus of poliomyelitis before it injures functionally the motor nerve cells, no question, such as I am presenting, would arise. However, there is no better and more calculable method known. The choice is therefore between no therapeutic intervention at all and a kind of therapeutic intervention believed to be harmless and not known actually not to be sometimes useful in cases of this tragic disease.

DR. WILLIAM H. PARK, New York: In the opinion of the workers of the state department of health, the serum did not do any particular good. However, there is another way of looking at the matter, as Dr. Flexner has pointed out, and that is a personal one. I should like to put the question to every man here, If it was his child that had poliomyelitis, would he or or would he not give the serum?

Epidemiology of Typhus Fever and the Possible Evolution of the Rickettsia Disease Group

DRS. HANS ZINSSER, HERMAN MOOSER and M. RUIZ CASTENEDA, Boston: Typhus fever differs according to locality. That in Mexico is different from that in Europe. In both localities, susceptible rats and mice act as the animal reservoir. They are infected by ticks, bedbugs, rat fleas and rat lice. The flea is the most likely carrier. The disease is carried to man by the close association of rat and man. In regard to lesions, the characteristic brain lesions found in the European type are also found in Mexico. In some countries a scrotal lesion is more common. Perhaps the scrotal lesion may immunize against the brain lesion. A certain immunologic relationship is found between strains in different parts of the world. In testing these, the most useful animal is the guinea-pig. It presents the characteristics of the disease as regards temperature curves, mortality, scrotal lesions and brain lesions. The types of disease giving scrotal lesions show a cross immunology. It is thought that perhaps different insect forms in different countries influence the strains and cause differentiation in types. However, the New and Old World types may, at times, approach each other with great exactness.

Rickettsia are able to survive in a considerable number of rodents, rats, mice and rabbits. The spotted fever type is most adapted to the life of the tick. It is highly infectious. The virus can always be rejuvenated by passing through man. In the Old World the disease is kept alive in lice-infested districts; in the New World it is propagated by rat fleas. Probably the rodent reservoir occurred first and the insect adapted itself. Studies seem to show that the louse-man cycle is later than the tick-flea-rat cycle. We also believe that the African virus and the Old World virus are similar, or the same thing.

Relapsing Fever and Rat-Bite Fever in the United States

DR. EDWARD FRANCIS, Washington, D. C.: Weller and Graham collected evidence of about fifty cases of relapsing fever occurring during the last few years in Texas traceable to tick bites received while visiting caves in Llano, San Saba, Mills, Travis and Denton counties. Ticks of the species Ornithodorus turicata collected in dry dust taken from the floors of caves in Mills County and San Saba County, Texas, and received in our laboratory conveyed relapsing fever, acquired in nature, to rhesus monkeys on which they fed. Six days after being bitten by ticks, the monkeys manifested an abrupt onset of fever lasting a day or two, followed by normal temperature for four or five days, then six similar pyrexial attacks and six intermissions, followed by spontaneous recovery. Spirochetes having a length about twice the diameter of a red blood corpuscle were found by dark field examination and in stained smears of the monkeys' blood at times of fever, but not between. Bedbugs which were infected with this strain in the laboratory by feeding on the tails of infected white mice were capable for six months after their last infective feed to infect white mice into which they were injected but were never able to infect healthy mice on which they fed every ten days during the six months. California reported in 1931 ten cases of relapsing fever of man, confined by demonstration of the spirochetes in the blood.

A boy, aged 6 years, had seven paroxysms of fever in thirty-seven days. Macular eruption, demonstration of spirochetes in inoculated animals, and cure of the patient with arsphenamine clinched the diagnosis. There was no actual history of rat bite but there was edema of the penis, which extended from a very small healed point. A small amount of fluid aspirated from a slightly enlarged left inguinal lymph node and injected into a white rat yielded a strain of spirochetes, which was carried through white mice, white rats and guinea-pigs. The organism was a short spiral having few turns, few in number, very active in dark field preparations of animal blood, showing flagella at the ends, and having a length about half the diameter of a red cell. Much time can be consumed in fruitless search of the patient's blood for spirochetes. Only once (Steiner) has the organism been seen in the blood of cases contracted in nature in the United States. Shattuck and Theiler injected the patient's blood into white mice and guinea-pigs. Lanford and Lawson injected a white rat with lymph node juice of the patient. Bayne-Jones injected a guinea-pig with a macule from the patient's skin. The blood of white mice examined by dark field frequently for fifteen days after inoculation yields the quickest and surest demonstration of the spirochetes. An eye accustomed to the slow backward and

forward movements of Spirochaeta pallida may completely fail to grasp the significance of the darting progression of one short Spirochaeta morsus-muris.

DISCUSSION ON FEVER

DR. HANS ZINSSER, Boston: We made a search for typhus fever in rats in Boston, and found a considerable number of rats infected. We found that many rats suffered from rat-bite fever. Many of them had pseudo-encephalitis, and there was considerable morbidity among rats with rat-bite fever, so that it is surprising how few cases of typhus fever are reported among human beings.

DR. W. S. THAYER, Baltimore: The seriousness of rat-bite fever was impressed on me in Rome in a case in which a child of a friend of mine was the victim. The child awakened with a sudden cry and was found with the finger bleeding. After this the child suffered from peculiar phenomena and became very ill. An associate of the Pasteur Institute was called in and he asked whether any rats had been noticed. The nurse then recalled that a big rat had been seen in the room where the child slept. The wound was reexamined and the scar was found to show the indentations of the rat's teeth.

DR. W. W. FORD, Baltimore: With regard to rats in Baltimore, we have obtained the organism of rat-bite fever from rats and transferred the material to white rats, in our work on search for parasites. We have found a leptospirillum, trypanosomes, and the spirillum of rat-bite fever. The rats, however, serve mainly for demonstration purposes in teaching. Although a large proportion of rats are infected, cases of rat-bite fever are rare in Baltimore, and spirochetal jaundice is not observed.

DR. EMANUEL LIBMAN, New Yoak: In rat-bite fever the chances of infection are numerous, but the cases of fever are unusual. I saw two cases thirty years ago. Since then I have seen no cases in New York.

DR. GEORGE BLUMER, New Haven, Conn.: The first case of rat-bite fever that was reported was in 1830. Recently in the library at Yale I found notebooks of the students of Eli Ives, an early professor. In his lectures it was stated that the bite of the rat was dangerous under certain circumstances, and a satisfactory account was given of all the symptoms of rat-bite fever, which was noted thirty years ago.

DR. EDWARD FRANCIS, Washington, D. C.: We don't find many cases, and there have been no instances in which the spirochetes were found in the patient. They have been recovered in inoculated animals but not in man. The only way to get the spirochetes is to inoculate experimental animals.

DR. WALTER R. STEINER, Hartford, Conn.: In a report I presented to the American Climatological and Clinical Association, I thought that I had found an organism which was a spirochete. I was unable to cultivate it. It was immobile, and I found that instead of being a spirochete it was a spirillum. I had a photomicrograph made of the organism.

DR. FRANCIS G. BLAKE, New Haven, Conn.: Previous experiments in animals have suggested that basic active immunity to pneumococcal infection may depend on common antipneumococcal species rather than on type-specific antibodies. To test this theory the titer of antipneumococcal species agglutinins has been determined in the blood serum of 887 individuals from birth to old age, and the cumulative percentage curves for each of the titers found (0 to 1:10,240) have been compared with morbidity rates of the different types of pneumococcal pneumonia according to age. Since these curves seem to show a significant relation between low agglutinin titer and morbidity, the work has been pursued further by studying the course of subcutaneous pneumococcal infection in two groups of guinea-pigs, those with and those without species agglutinins in the blood. None of the animals in either group had detectable type-specific agglutinins in the blood serum. Following subcutaneous injection of 0.5 cc. of a saline suspension of virulent type-specific pneumococci, guinea-pigs with antipneumococcal species agglutinins showed a transient mild inflammatory reaction with a duration of from twenty-four to ninety-six hours, with prompt recovery, while those without species agglutinins showed a severe spreading cellulitis with a duration of from seven to eighteen days, frequently with hemorrhage, necrosis and ulceration, and with death in a considerable proportion. These results are in harmony with the view that basic active immunity to pneumococcal infection is a broad antipneumococcal species immunity and that the titer of species agglutinins may be a rough measure of susceptibility or resistance.

Advances in Serum Therapy of Pneumonia, Meningitis and Scarlet Fever

DR. AUGUSTUS WADSWORTH, Albany, N. Y.: The bacterial incitants of infectious disease differ markedly in virulence, in their parasitic adaptation to the tissues of an animal, in the potency of the toxins which they produce, and in their immunizing action. These capacities of the micro-organisms determine not only the chararter, extent and course of the disease processes but also the potency and valence of the therapeutic serums that are prepared from them. From the beginning, the quality of the antipneumococcus, antimeningococcus and antistreptococcus serums that have been generally available has varied greatly. While definite improvement has resulted from the establishment of federal and (in New York State) state control and supervision, the distribution of unsatisfactory serums has not been altogether eliminated. The practice of concentrating serums of low potency is commercially profitable, but unless the method is used solely to improve the quality of serums of the highest potency attainable there is no practical advance.

A total of 853 cases of type I pneumonia, treated with unconcentrated serum of the highest potency, had a mortality of 12.4 per cent, which, with the elimination of cases unsatisfactorily treated, approximated the mortality in Dr. Rufus Cole's series of cases at the Rockefeller Hospital; namely, 10.9 per cent. With antimeningococcus serum, a mortality of 18.4 per cent was recorded in a series of 742 cases of meningococcus meningitis. Favorable results were obtained with a monovalent unconcentrated antistreptococcus serum in the treatment of scarlet fever, erysipelas and other forms of streptococcus infection. A mortality of 4.3 per cent was reported in 1,052 cases of scarlet fever, of which 402 were classified as severe, 441 as moderate, and only 209 as mild. The mortality of the 194 cases of erysipelas was 8.2 per cent, and the serum appeared to be quite as effective in this disease, although, in a few instances, the serum, so far as could be ascertained, had no effect, indicating the importance of the selection of the strains and of a broad valence as well as a high potency in the serum.

DISCUSSION ON IMMUNIZATION

DR. WILLIAM H. PARK, New York: Dr. Ross is trying to immunize human beings by feeding pneumococci of types 1, 2 and 3. Only 1 per cent may have type 1. I think there is great variation in individuals so far as the mouse potency test goes.

DR. F. T. LORD, Boston: Dr. Wadsworth has spoken of the problems of the laboratory. There are also practical problems in putting the product into circulation. In Massachusetts there are technical difficulties which confront the doctor. These difficulties have to a considerable extent been overcome in Massachusetts in respect to meningococcus pneumonia by an organization which deals from a central source in cooperation with the physician. The state commissioner of health has control of a grant to provide serum treatment for cases of pneumonia. Through this generous grant from the commonwealth we have been able to carry on satisfactorily. The School of Public Health at Harvard studies the epidemiology of the disease. The White antitoxin and vaccine laboratory of the state standardizes the potency of the serum after the method of Felton. We have also funds enough to cover the clinical work in the state. There is a state advisory committee. There are eleven areas in which we have set up a pneumonia service. In each of these centers we have technicians trained in pneumococcus typing, and connected with the advisory committee we have three or four physicians practicing in each area. The concentrated pneumococcus serum is given to these physicians, and the physician may call in consultation, if he wishes, a man from the laboratory to give the serum. We have accomplished one thing. We have made a short disease of lobar pneumonia, and we have eliminated a large number of the cases. The dosage given is 5 cc., 25 cc. and then 45 cc. at intervals of two hours. We do not yet know what the

ideal dose is. This program has been carried out for eighteen months. The clinical records are being filled out and returned to us. We have records of eighty-nine patients treated before the fourth day. The mortality record is 12.3 per cent.

DR. AUGUSTUS WADSWORTH, Albany: My reason in presenting this paper was not to urge general use of antistreptococcus serum, although that is our ultimate aim, but to stress the importance of a thorough, painstaking investigation of the different strains of streptococci. When we obtain a serum of practical value, it will be made available for distribution.

Isolation of Spirochaeta Pallida from the Lesion in Gastric Syphilis

DRS. HUGH J. MORGAN and SEALE HARRIS, JR., Nashville, Tenn.: This article will appear in full in THE JOURNAL.

Reaction of Immune Rabbits Toward Reinoculation with Heterologous Syphilitic Virus

DRS. ALAN M. CHESNEY, THOMAS B. TURNER and FRANKLIN H. GRAUER, Baltimore: It has been established by several groups of workers that rabbits, during the course of an experimental syphilitic infection, acquire a resistance against the particular strain of spirochetes with which they were originally infected, and that this resistance persists after intensive treatment with arsphenamine. It has also been shown that this resistance is oftentimes not effective against heterologous strains of spirochetes obtained from different sources. Hitherto this resistance has always been tested by inoculating the animals by subcutaneous or intratesticular injection, a method that is favorable to the inciting agent and does not resemble the usual mode of infection in man. It was found that the resistance which develops in rabbits during the course of syphilitic infection is not effective against heterologous strains when the reinoculation is performed by dropping the inoculum on an intact mucous membrane surface, thus more closely simulating the natural conditions of infection in man. Even under conditions closely simulating the usual mode of inoculation in man, the resistance is found to be strain-specific, not species-specific. The extreme rarity of second infections in man, as pointed out by Kolle, suggests that in the case of human beings acquired immunity to syphilis is effective against heterologous strains of spirochetes, a condition that does not hold true for rabbits. If this discrepancy in the behavior of the two species (man and rabbit) toward heterologous strains really exists, as appears to be the case, it is necessary to be cautious in applying wholesale to human syphilis the results of study of immunity in the experimental infection in rabbits.

The Contagion of Tuberculosis

DRS. EUGENE L. OPIE and F. M. MCPHEDRAN, Philadelphia: We studied a group of families with histories of tuberculosis. We divided them into (1) sputum positive, (2) sputum negative, (3) suspected cases and (4) no member with tuberculosis. Our tests included repeated sputum examination, roentgen examinations, clinical examination and tuberculin tests. We found that there were many latent unsuspected cases in which tuberculin tests were the only evidence, although some patients showed roentgen changes. Latency represents the preclinical period of tuberculosis. This represents a serious problem, as all manifest tuberculosis is preceded by a period of latency. Marital contagion is a frequent source of exogenous infection. Adolescents often become reinfected in the home. On consultation, 12.4 per cent of patients were sputum positive and 4 per cent sputum negative. There was latent apical tuberculosis in 35 per cent. A wife with a sputum positive husband is very likely to acquire tuberculosis. Age is an important factor; adolescents are very likely to acquire contagion.

DISCUSSION

DR. F. T. LORD, Boston: There would appear to be a very important corollary to this work, which I believe Dr. McPhedran would endorse, and that is on discovery of a case of tuberculosis it is extremely important to examine the family. The state of Massachusetts has been conducting a ten year program of the skin testing of school children. The reaction is present in 27 per cent of our school children. There is 1 or 2 per cent of childhood tuberculosis and 1 in 1,000 present the familial type of tuberculosis. It is extremely important for the health of children that we discover tuberculous families. We must discover not only the infected child but also the source of his infection. Bovine tuberculosis plays a minor rôle in adults.

DR. WILLIAM H. WELCH, Baltimore: Infection with tuberculosis in childhood is not comparable with marital infection. I should like to ask Dr. McPhedran about this point. I think these are significant observations because they indicate that cases of tuberculosis in adult life are the result of reinfection. They are supposed to be due to lowered resistance lighted by infection already existing. Marital partners had already been infected. Are these reinfection with bacilli from an infected partner, or is it a case of lowered resistance without new infection? Marital tuberculosis should be considered quite apart from the tuberculosis of childhood.

DR. HAVEN EMERSON, New York: I think the great significance of Dr. McPhedran's communication is in regard to the question of reporting the disease. Half the active cases of tuberculosis are not known and 29 per cent are not reported at all until within one week of death, or even after death. Fifty-three per cent are under no kind of sanitary supervision. In Boston I took a group of fifty active cases in which the patients had in the aggregate been exposed to infection for 1,500 years. These fifty patients had, in their own homes, been known to be from six to ten years in contact with tuberculous infection. The gap between our knowledge and our practice is becoming wider. Our authorities lag further and further behind in preventive work. One means that can be used is repeated examination of school children. We are now examining 500 school children in three hours, at a cost of 75 cents apiece. That is making a beginning. We get an exact examination of the chest. But that does not protect the child. The failure to protect the child when a case of exposure to infection is discovered is the colossal blunder of the public health movement of today.

DR. F. M. MCPHEDRAN, Philadelphia: Dr. Lord has pointed out the necessity of searching for the source of infection when a diagnosis has been made. This is very important. Dr. Welch has spoken of exogenous infection. This is an interesting point. From a study in Philadelphia over ten years, I think that half the cases present reinfection. There is no doubt that adolescent tuberculosis is due to reinfection. With high counts in the sputum, these patients go down very rapidly. I have found that in Italians the resistance is good. In some districts 75 per cent of the population is Italian. When controlled by figures among the Jewish population, I found about the same proportion of cases. The question of preventing continued infection is the crux of the whole matter. It is necessary to distinguish between sputum positive and sputum negative tuberculosis. In the children of grade school age, tracheobronchial infection has been made reportable. After one has got past the grade school, one can trace the source to the family, but one can't do much. In the high school age one gets lesions of immediate significance.

Plasma Proteins in Patients with Anemia

DRS. CHESTER S. KEEFER and WALTER K. MYERS, Boston: We do not see much edema in patients with enemia. We therefore examined the blood plasma of twenty-six anemic patients to see whether there was reduction of the plasma proteins. These cases included anemia from malnutrition, pernicious anemia and anemia due to loss of blood. The hemoglobin examined ranged from 12 to 60 per cent; the red blood cell count was from a half to three million. We sought to find whether there was any relation between the hemoglobin and the presence of edema but found no connection between the two. There was also no relation of the total proteins and the hemoglobin. We found that the total proteins were related to the edema. When edema was present, the total proteins were below 5 per cent. If the total proteins were above this there was (with few exceptions) no edema, either while the patients were in bed or when they were walking about. In some patients with low proteins, however, there was no edema. We found that there was no relation between blood loss, as from trauma, and edema. Our studies showed that with restricted protein intake, causing malnutrition, there was tendency to edema and low proteins in the blood.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

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*Effect of Fasting on Activity of Skeletal Muscle. C. E. Leese, H. M. Hines and D. P. Jordan, Iowa City.—p. 241.
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Heterotopic Bone Formation in Thyroparathyroidectomized Dogs. C. A. Dragstedt and J. E. Kearns, Jr., Chicago.—p. 262.
*Specificity of Pancreatic Lipase: Its Appearance in Blood After Pancreatic Injury. I. S. Cherry and L. A. Crandall, Jr., Chicago.—p. 266.
Metabolism in Yucatan: Study of Maya Indian. M. Steggerda and F. G. Benedict, Boston.—p. 274.
*Insulin in Tissues Other Than Pancreas. E. H. Best, C. M. Jephcott and D. A. Scott, Toronto, Canada.—p. 285.
Effects of Sympathetic Denervation of Mammalian Tissues During Period of Postnatal Growth. S. S. Tower, Baltimore.—p. 295.
Excretion of Urine in Dog: III. Use of Nonmetabolized Sugars in Measurement of Glomerular Filtrate. N. Jolliffe, J. A. Shannon and H. W. Smith, New York.—p. 301.
*Action of Epinephrine on Intestine Following Stimulation by Parasympathetic Drugs. F. Bernheim and B. H. Blocksom, Jr., Durham, N. C.—p. 313.
Studies of Gallbladder Function: VII. Anion-Cation Content of Hepatic and Gallbladder Bile. I. S. Ravdin, C. G. Johnston, C. Riegel and S. L. Wright, Jr., Philadelphia.—p. 317.
Simultaneous Study of Constituents of Sweat, Urine and Blood, Also Gastric Acidity and Other Manifestations Resulting from Sweating: IX. Uric and Lactic Acids. A. K. Saiki, G. Olmanson and G. A. Talbert, Grand Forks, N. D.—p. 328.
Study of Excised Uterus of Rat, Its Volume Displacement and Irritability to Pituitrin, with Reference to Estrous Cycle. O. G. Harne, Baltimore.—p. 331.
Studies on Physiologic Action of Rattlesnake Venom (Crotalin): XI. Effect of Crotalin on Swine. H. E. Essex, Rochester, Minn.—p. 339.
Failure of Diet to Influence Adrenin Content of Adrenal Glands. A. Rosenblueth and R. Gayet, Boston.—p. 342.
Current Flowing Through Heart Under Conditions of Electric Shock. W. B. Kouwenhoven, D. R. Hooker and O. R. Langworthy, Baltimore.—p. 344.
*Digestive Leukocytosis Question. W. E. Garrey and Virginia Butler, Nashville, Tenn.—p. 351.
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Analysis of Rhythmic Vascular Changes in Uterus of Rabbit. J. E. Markee, San Francisco.—p. 374.
Cardiovascular Response of Healthy Young Men to Postural Variations at Varied Temperatures. J. E. Hamilton, J. S. Lichty and W. R. Pitts, Boston.—p. 383.
Hydrogen Ion Concentration of Gastric Juice of Fetal and New-Born White Rats. I. A. Manville and R. W. Lloyd, Portland, Ore.—p. 394.
Comparison of Relation Between Rate of Urea Excretion and Amount of Renal Tissue in Dog and Other Mammals. E. M. MacKay, La Jolla, Calif.—p. 402.
Capillary Counts in Resting and Active Muscles. E. G. Martin, Eola C. Wooley and Miriam Miller, San Francisco.—p. 407.
Reflex Stimulation of Respiration from Increase in Venous Pressure. T. R. Harrison, W. G. Harrison, Jr., and J. P. Marsh, Nashville, Tenn.—p. 417.
Human Milk Studies: XI. Vitamin G (B_2) Content of Mixed Milk. Eva Donelson and Icie G. Macy, Detroit.—p. 420.
Vital Capacity of Lungs at Low Barometric Pressure. E. C. Schneider, Middletown, Conn.—p. 426.
Some Phases of Liver and Gallbladder Function: Experiments on Rabbits with Certain Organic Compounds, Particularly Dyes. Béla Halpert and M. T. Hanke, New Haven, Conn.—p. 433.
Action of Certain Drugs on Nictitating Membrane. A. Rosenblueth, Boston.—p. 443.

Effect of Fasting on Activity of Skeletal Muscle.—Leese and his associates made a study of the effects of fasting on the activity of the artificially stimulated intact gastrocnemius muscle of the anesthetized rat. The phases of activity studied were the number of stimuli required to produce fatigue and the amount of work done by the muscle. The results indicate that fasting for periods of from 24 to 144 hours did not affect either the rate of fatigue or the total amount of work done by the artificially stimulated intact muscle. Studies were made on the glycogen content of liver and muscle from control and exercised animals. In all experiments, fatigue occurred before an exhaustion of liver and muscle glycogen. The amount of work performed by the muscle and the rate of fatigue were found to be independent of the amount of glycogen present in liver and muscle at the beginning and at the end of the experiments.

Specificity of Pancreatic Lipase.—Cherry and Crandall report that following obstruction of the pancreas in dogs an olive oil splitting lipase appeared in the blood in large amounts; there was no significant uniform change in esterase as measured by hydrolysis of ethyl butyrate or tributyrin. This is interpreted as evidence of the specificity of lipase; it is suggested that this term "lipase" be reserved for the enzyme (or enzymes) capable of splitting true fats and oils, and that the term esterase be used for the enzyme (or enzymes) acting on the simple esters. Lipase (olive oil splitting) was found in significant amounts only in pancreas, intestinal mucosa, liver and spleen. All tissues studied contained an esterase. A study of the activity of pancreatic and liver extracts and blood serum on twenty-one different esters gave no evidence of specificity other than that indicated by the absence of activity toward olive oil in certain tissues and its presence in others.

Insulin in Tissues Other than Pancreas.—Using a method of extraction which yields maximal amounts of insulin, from pancreas, Best and his associates were unable to demonstrate the presence of an antidiabetic substance in other normal tissues from the dog or ox or in the tissues of diabetic dogs. Positive results previously reported they believe can be attributed to one or more of several factors, each of which they discuss. Certain experimental results that have indicated a wide distribution of an insulin-like substance in the plant kingdom were not confirmed.

Action of Epinephrine and Parasympathetic Drugs on Intestine.—Bernheim and Blocksom describe experiments in which they demonstrated that epinephrine added to the ileum of a guinea-pig which has been contracted by pilocarpine or physostigmine causes a further contraction, which may or may not be followed by relaxation. After histamine, epinephrine always causes relaxation, but the relaxation occurs after a definite latent period. The relaxation is more rapid and the latent period shorter in the presence of nicotine or atropine. These facts indicate that epinephrine may act as an adjuvant to parasympathetic drugs and that its action is dependent on the amount of parasympathetic stimulation.

Digestive Leukocytosis.—Garrey and Butler are of the opinion that the low basal leukocyte count of the resting state is unaffected by the intake of large quantities of either protein or carbohydrate. Sudden distention of the human stomach, or abrupt changes in gastric temperature, due to hot or cold fluids, cause an immediate but mild and transient rise in the leukocyte count. Animal experiments indicate that these reactions are due solely to reflex vascular disturbances but have no relation to the absorption of digest. All experiments indicate that there is no digestive leukocytosis in normal adults.

American Journal of Psychiatry, Baltimore

11: 831-1024 (March) 1932

Psychiatry in Medicine. F. P. Moersch, Rochester, Minn.—p. 831.
Influence of Religious Ideas on Etiology, Symptomatology and Prognosis of Psychoses, with Especial Reference to Social Factors. C. B. Farr and R. L. Howe, Philadelphia.—p. 845.
*Treatment of Involution Melancholia with Ovarian Hormone. K. M. Bowman and Lauretta Bender, Boston.—p. 867.
Mental Reactions at Climacterium. G. R. Jameison and J. H. Wall, White Plains, N. Y.—p. 895.
*Paranoid Reaction Occurring in Women of Middle Age. G. H. Stevenson and S. R. Montgomery, Whitby, Ont., Canada.—p. 911.
Study of Depressions in Late Life, with Especial Reference to Content. Eleanora B. Saunders, Towson, Md.—p. 925.
Scientific Psychology and Schools of Psychology. L. Carmichael, Providence, R. I.—p. 955.
Philadelphia and Psychiatry: Introduction. H. D. Palmer, Philadelphia.—p. 969.

Treatment of Involution Melancholia.—Seven patients with involutional melancholia were treated by Bowman and Bender with an ovarian hormone preparation. The method

and amount of treatment varied. A careful study before and after treatment was made of the blood pressure, basal metabolism, blood chemistry (including nonprotein nitrogen, uric acid, cholesterol, fasting sugar and sugar curve), and the galactose tolerance. Two patients showed a good social recovery. Three patients were unimproved and now show a chronic picture. Two patients died, one of anemia and bronchopneumonia, and one of carcinoma of the uterus. The treatment, therefore, appears to have had little or no effect on the final outcome of these cases. In giving the ovarian hormone preparation, the authors had in mind the possible restoration of the menstrual cycle. The results were quite different. Except in one case, in which a very slight flow occurred on two occasions, the effect of treatment was to cause complete cessation of the menses. In three cases there was menstruation up to the time of treatment, but none after treatment started. In one case menstruation continued for two months after treatment and then ceased. One patient had had a panhysterectomy, so that no changes were possible. One had had the menopause eleven years previously, and treatment produced no effect. Very little change occurred in the blood chemistry during treatment. When such changes did occur, they were usually in the direction of a more normal condition. However, some patients did show disturbances in weight, arterial tension, and increase in nonprotein nitrogen not due to any apparent cardiorenal-vascular disease, a low blood cholesterol, disturbances in sugar curves, and low basal metabolism. These may all be favorably influenced by glandular therapy, especially the specific female sex hormone. Such therapeutic measures may improve the patient's general physical condition, alleviate distressing symptoms, remove abnormal sensations which may be feeding delusional trends, or shorten remissions, and in some instances are apparently associated with complete clinical recoveries.

Paranoid Reaction.—According to Stevenson and Montgomery, there appears to be a clinical subentity in the psychogenic or "reaction to environment" group of psychoses, in which the chief symptoms are persecutory delusions, with or without hallucinations, and without obvious personality or intellectual changes, occurring in highly moral women, and becoming apparent during the fifth and sixth decades after a long prodromal period, the change from normal to psychopathic being so gradual that relatives have found difficulty in fixing the date of onset, and persons who have but slight contact with the patient are not aware that the individual is suffering from a psychosis. A close study of many cases admitted to mental hospitals over a period of years has convinced the authors that there is a specific etiologic factor, among others common to the group as a whole. This so-called specific factor they believe to be an overt or imagined sinful act on the part of the patient, which is not sinful to the patient, however, as she either projects the blame on others or denies that it would have been consciously desired by her. The situation is thus not dealt with adequately and honestly, and a state of emotional unrest is produced. As a quietus to conscience, a persecutory delusional trend is developed slowly and progressively until a well marked psychosis results.

American Journal of Surgery, New York

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Some Experiences with Oleothorax. H. C. Ballon, St. Louis.—p. 1.
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Present Status of Cancer of Cervix and Uterus. C. H. Weaver, Los Angeles.—p. 28.
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*Traumatic Lesions of Abdominal Viscera. J. W. Hinton, New York.—p. 45.
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*Recurring Omental Hypertrophy Simulating Abdominal Tumor. J. G. Probstein, St. Louis.—p. 50.
Chronic Ulcerative Colitis: Surgical Treatment with Report of Three Cases, Seven, Eight and Nine Years Later. J. R. Regan and E. H. Mensing, Milwaukee.—p. 52.
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Uterine Transposition of Ovary with Conservation of Its Vascular Nervous Pedicle. R. Petit, Paris, France.—p. 94.
Hydrogymnastic Exercises for Acute Injury: Personal Experience. C. L. Lowman, Los Angeles.—p. 101.
Embryogenesis of Anencephalia and Spina Bifida. F. A. Mandruzzato, New York.—p. 104.
Theories of Mycosis Fungoides, Hodgkin's Diseases, and so on: Two Case Reports. B. Markowitz, Bloomington, Ill.—p. 113.
Prostatic Harpoon: New Tractor for Suprapubic Prostatectomy. I. Wills, Santa Barbara, Calif.—p. 118.
Simplified Catheterizing Cystoscope. H. D. Furniss, New York.—p. 120.

Traumatic Lesions of Abdominal Viscera. — Hinton urges an immediate laparotomy in cases in which one is reasonably certain of an injury to a hollow viscus from traumatism to the abdomen. If the diagnosis is questionable, however, through the symptoms being masked between those of a rupture of a solid organ, such as the liver, kidney or spleen, and retroperitoneal hemorrhage on the one hand, as against injury to a hollow viscus, it is to the patient's advantage to employ conservative methods of treatment rather than to submit him to immediate operation. If this principle is followed, one will have a lower mortality and morbidity in cases of injury to the abdominal viscera.

Recurring Omental Hypertrophy.—Probstein believes that primary hypertrophy of the omentum is probably not associated with any inflammatory condition, especially in view of the lack of microscopic observations to substantiate the term "omentitis or epiploitis," thereby suggesting a state of inflammation. This hypertrophy may be due to some circulatory interference rather than to an infection in which the omentum becomes enlarged, edematous and hemorrhagic. The term "omental hypertrophy" seems much more appropriate to the author in view of his observations than omentitis or epiploitis, which suggest the association of the pathologic changes with an inflammatory condition.

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*Oleothorax. R. W. Matson, Portland, Ore.—p. 419.
*End-Treatment of Artificial Pneumothorax: New Use for Phrenic Avulsion. J. C. Dundee, New York.—p. 469.
Artificial Pneumothorax Abandoned and Reestablished. E. H. Rubin, New York.—p. 490.
*Observations on Accessory Roots in Phrenic Exeresis. L. Fisher, Waverley Hills, Ky.—p. 497.
*Pulmonary Tuberculosis Without Pleural Involvement Simulating Chronic Adhesive Pleurisy. E. N. Packard, Syracuse, N. Y.—p. 502.
Danger Period in Treatment of Pulmonary Tuberculosis. J. B. Hawes 2d, Boston.—p. 507.
Some Reasons for Treatment of Tuberculosis Patients in General Hospitals. A. T. Laird and R. M. Mayne, Duluth, Minn.—p. 512.
Incidence of Tuberculous Infection Among Students of High School. Edith S. Hewitt and R. E. Cutts, Rochester, Minn.—p. 525.
*Blood Sedimentation Tests, Modified Arneth Method and Schilling Count: Comparison of Their Diagnostic and Prognostic Significance. H. I. Spector and R. O. Muether, St. Louis.—p. 533.
Studies on Vital Function: X. Influence of Brief Preventorium Treatment on Pretuberculous Child. A. W. Rowe, Mary McManus and Dorothy E. Gallivan, Boston.—p. 546.
Id.: XI. Some Considerations on Care of Pretuberculous Children. A. W. Rowe, Mary McManus and Dorothy E. Gallivan, Boston.—p. 560.
Generalized Subcutaneous Emphysema Secondary to Pathologic Fracture of Rib in Advanced Pulmonary Tuberculosis: Report of Case Together with Case Report with Treatment by J. N. Nichols. C. C. Browning, Los Angeles.—p. 571.

Oleothorax.—Matson calls attention to the fact that oleothorax therapy, although closely related to pneumothorax therapy, is a comparatively recent method of treatment and therefore lacks the test of time. Oleothorax therapy requires far more technical skill, keener judgment in the selection of material, and much more careful observation of cases than is

required in pneumothorax therapy. Oleothorax therapy is indicated in the course of pneumothorax therapy under the following conditions: (1) as a disinfection oleothorax; (2) to inhibit the expansion of the lung in a threatened early obliterative pneumothorax, and (3) as a compression oleothorax to reestablish collapse, or for the purpose of collapsing rigid-wall cavities in which an intrapleural pneumolysis is impossible. Two types of oil are used, mineral and vegetable, to which aromatized oil is added in a strength of from 1 to 10 per cent. Mineral oil is less absorbable and less irritating than a vegetable oil. A mineral oil is recommended in order to inhibit expansion of the lung or for compression purposes. A vegetable oil is preferable in the toxic, mixed-infection empyemas, because its rapidity of absorption permits a penetrating action of the aromatized oil. It also possesses great nutritive value. Aromatized oil, in a strength of 5 per cent, is capable of killing the tubercle bacillus and is therefore recommended in the tuberculous empyemas. In the mixed-infection empyemas it should be used in a strength of 10 per cent, since weaker solutions are not able to destroy mixed-infection microorganisms. The fundamental principles of a disinfection oleothorax are (1) complete evacuation of the pus, (2) thorough cleansing of the pleural cavity, and (3) a disinfection oil-bath of the entire serosa. Oleothorax is not justified in the treatment of an ordinary pneumothorax empyema unless it tends to chronicity and toxicity. Any substance, even air, when introduced into the pleural cavity, is likely to act as an irritant to which the pleura responds with an exudate formation. For the reason mentioned, oleothorax therapy is not intended to supplant pneumothorax therapy, and it should be employed only when it is evident that a pneumothorax cannot serve its purpose. Oleothorax therapy is not recommended for the treatment of the ordinary serofibrinous exudates, which are well tolerated, for the reason that the oil may produce an inflammatory reaction, thus reawakening the exudative activities of the pleura. In the absence of a purulent exudate, one should never attempt an oil blockade of the pleural cavity without first having tested the sensitiveness of the pleura to oil. In converting a pneumothorax into an oleothorax, one should be careful not to disturb the intrapleural pressure. This is accomplished by injecting the desired quantity of oil and the aspiration of air in units of 20 cc. Before a compression oleothorax is established, the pleura should be prepared for higher oil pressure by preceding increased high air pressures. There is grave danger of lung perforation when a compression oleothorax is maintained under high pressure. Pleuropulmonary perforations are almost invariably due to progressive lesions in the lung cortex or pleura which ulcerate into the pleural cavity. The apparent increased incidence of pleuropulmonary perforation in patients undergoing oleothorax therapy is due to the fact that more cases are revealed by the oil. The presence of an unaccountable, gradual elevation of temperature demands exploration of the oleothorax cavity.

End-Treatment of Artificial Pneumothorax. — Dundee believes that in many cases the artificial pneumothorax treatment of pulmonary tuberculosis can be terminated more satisfactorily at home than at a sanatorium, because the reexpanding lung is best tested when the patient is in a normal environment and carrying on his normal work. The description and the end-treatment of certain different types of artificial pneumothorax are presented. In two types, phrenic avulsion, in a new capacity, is advocated to help obliterate the remaining pleural space, to prevent undue stretching of pulmonary scars and to diminish mediastinal retraction. Four cases are cited. All of these cases show a highly satisfactory response. The term "inner selective collapse" is used to describe a collapse in which the normal area of the lung is allowed to reexpand only 80 per cent. This method is recommended as preferable to "selective collapse" when the normal area of the lung is allowed to reexpand completely. The author condemns the practice of allowing moderate to large amounts of fluid to remain in the pleural cavity for prolonged periods, because such a procedure eventually tends to limit seriously the reexpansion of the lung, as it usually increases pleural thickening, pulmonary fibrosis and atelectasis. The benefits gained by allowing moderate to large amounts of oil to remain for a long time in the pleural cavity must be carefully weighed, as here also there is danger of excessive formation of pulmonary fibrosis and atelectasis.

Accessory Roots in Phrenic Exeresis.—Fisher analyzes a recent series of phrenicectomies, accompanied by careful search for accessory phrenics, with regard to the value of this procedure. In thirty-six phrenic exereses, one or more accessories were found in twenty-two cases, or 60 per cent. Five had multiple accessories, four being the greatest number found in any given case. In eight an accessory accompanying the nerve to the subclavius was found and resected. In one case a double phrenic was present, the two being of equal caliber, crossing the scalenus anticus and passing beneath the clavicle without uniting. Before exeresis of the main stem, resection of all accessory phrenic roots passing separately beneath the clavicle is suggested, as an aid to avulsion and as an additional safeguard against injury to the subclavian vessels. In the author's series, twenty-four phrenic nerves, or 66⅔ per cent, were completely avulsed by this method, the greatest length being 44 cm. In only one instance was less than 10 cm. obtained, in a patient who had been operated on a year previously in another institution without securing permanent paralysis; dense scar tissue rendered avulsion out of the question at the time of reoperation, although resection of an undoubted phrenic produced immediate immobilization and elevation of the hemidiaphragm. An appreciably larger incision is not ordinarily required in order to permit a search for accessories, although somewhat more thorough dissection of the deep structures and a little longer time are obviously necessary. In all the cases in the series, paralysis and elevation of the hemidiaphragm resulted.

Pulmonary Tuberculosis Simulating Chronic Adhesive Pleurisy.—According to Packard, pulmonary lesions alone may give all the physical and roentgenologic signs of an extensive adhesive pleurisy. Only by testing the pleural "space" with needle and manometer is it possible to tell whether there is pleural symphysis or not. Patients who present the physical and roentgenologic changes associated with an organized pleurisy should not be denied an attempt at artificial pneumothorax, if such therapy is clinically indicated. The author believes that artificial pneumothorax should be attempted before thoracoplastic operations.

Blood Sedimentation Tests.—Spector and Muether consider that the Rourke method is the most accurate blood sedimentation method yet devised for studying clinical as well as pathologic activity, and is superior to the thermometer or the total leukocyte count in this regard. The Cutler method is a practical method if the cell volume is within normal limits. The tests are not specific, as the sedimentation is rapid in other diseases, and do not give any information as to the extent of disease, except perhaps in a general way. However, they are of great aid in prognosis, and, diagnostically, in the sense that they detect infection. The modified Arneth method is just as sensitive in detecting early infection as any sedimentation test yet introduced. It is not as time consuming as either the Rourke or the Cutler method. The Schilling method appears to be inferior to the Rourke sedimentation test and the Arneth test. However, it throws more light on the question of resistance of the patient. The author's observations seem to suggest that a combination of the modified Arneth and the Schilling tests would give more information as to activity of the disease, prognosis, and resistance of the individual, than any of the sedimentation tests yet introduced.

Annals of Medical History, New York

4: 109-218 (March) 1932

Life and Times of Dr. William Harvey. W. Herringham, Hampstead, England.—p. 109.
Refutation of Ilberg as to Date of Galen's Birth. J. Walsh, Philadelphia.—p. 126.
Raymond Vieussens and His Treatise on the Heart. R. H. Major, Kansas City, Mo.—p. 147.
Leonardo da Vinci as Physiologist. Leona Baumgartner, New Haven, Conn.—p. 155.
John Locke: Physician and Philosopher. J. H. Dempster, Detroit.—p. 172.
Origin of University of Bologna. G. Franchini, Modena, Italy.—p. 187.
Historical Position of Coccidioides Immitis Among Pathogenic Fungi of Skin. D. W. Montgomery, San Francisco.—p. 199.
Obstetrics in Mexico Prior to 1600. N. van Patten, San Francisco.—p. 203.

Annals of Surgery, Philadelphia

95: 481-640 (April) 1932

History of Thyroid Surgery. C. F. Hegner, Denver.—p. 481.
*Thyroiditis. H. M. Clute and F. H. Lahey, Boston.—p. 493.
Nodular Goiter. J. W. Hinton, New York.—p. 499.
Lingual Thyroid. H. F. Ulrich, Philadelphia.—p. 503.
*Cardiac Features of Goiter: Especial Reference to Operation. J. deJ. Pemberton and F. A. Willius, Rochester, Minn.—p. 508.
*Use of Potassium Iodide in Hyperthyroidism. C. H. Frazier, Philadelphia.—p. 517.
Simplified Technic in Thyroidectomy. A. W. Hoaglund, Minneapolis.—p. 525.
How Much Thyroid Tissue Should be Removed in Toxic Goiter? F. H. Lahey, Boston.—p. 529.
*Thyroid Crisis. E. I. Greene and J. M. Greene, Chicago.—p. 537.
Malignant Tumors and Tumor-Like Growths of Thymic Region. D. Symmers, New York.—p. 544.
Suturing Wounds of Heart. D. C. Elkin, Atlanta, Ga.—p. 573.
*Effect of Arteriovenous Aneurysms on Heart: Report of Case Studied by Professor Rudolph Matas, Dr. George Herrmann and the Author. M. R. Reid, Cincinnati.—p. 578.
*Cancer of Colon and Rectum: Personal Experiences from 1892 to 1932. J. C. Bloodgood, Baltimore.—p. 590.

Thyroiditis.—Clute and Lahey state that acute thyroiditis rarely occurs as a serious prostrating condition. It occasionally progresses to abscess formation and requires adequate exposure and adequate drainage. Syphilitic thyroiditis occurs as a diffuse thyroiditis or as a nodular gummatous thyroiditis. It is cured by antisyphilitic treatment. Tuberculous thyroiditis is found occasionally on microscopic examination of thyroid tissue. It has little clinical importance. Chronic thyroiditis frequently produces considerable constriction of the trachea with pressure symptoms and requires surgical relief. An operation such as removal of the isthmus relieves the constriction and does not produce myxedema. Myxedema is particularly apt to follow operations on the thyroid for thyroiditis.

Cardiac Features of Goiter.—Pemberton and Willius stress certain principles which in their experience have proved of definite value in the operative treatment of goiter in persons with cardiac disturbances. Owing to the fact that the margin of safety in many of the cases is exceedingly narrow, as sometimes the slightest mishap will mean the difference between success and failure, the need for the greatest possible care in every phase of the operation is obviously indicated. In the selection of the anesthetic and the method of its administration there are two considerations of extreme importance: 1. Since all the patients are more or less debilitated and, therefore, particularly susceptible to pulmonary infection, the type of anesthesia which is least likely to contribute to this complication should be chosen, and, unquestionably, prolonged anesthesia by inhalation should be avoided. 2. The anesthesia should be such that the patient can be awakened, in a reasonable state of comfort, after resection of the first lobe, in order that the functional integrity of the inferior laryngeal nerve can be determined. The value of this is obvious, and in the authors' opinion it is the most important single step in the operation. It has been their experience that combined anesthesia, namely, infiltration with procaine hydrochloride (0.5 per cent), supplemented by nitrous oxide and oxygen by inhalation, most nearly fulfils these requirements. Under this method, the average duration of the administration of gases is from eight to ten minutes. For patients with obstructive dyspnea, local anesthesia is definitely indicated. Not uncommonly, in cases of congestive heart failure, there may be circumstances relating to the condition of the patient or to the difficulties of the operation, such that performance of the operation in stages will materially minimize the hazard. Too often the surgeon is prone to believe that the outcome of an operation is favorably influenced to only a limited degree by any measure instituted after the patient has left the operating room, and it is true that a large proportion of these patients do not require any treatment other than symptomatic measures employed as a routine. However, not uncommonly grave complications develop, such as obstructive dyspnea, hyperthyroid reactions, pulmonary edema and infection, and since the successful treatment of these is dependent on early recognition of impending signs and prompt institution of proper treatment, close supervision by an experienced clinician is indispensable. It is for this type of complication, associated with cyanosis, that treatment by oxygen, preferably in the oxygen chamber or tent, has proved to be of great value.

Use of Potassium Iodide in Hyperthyroidism.—Frazier reports a series of cases of both forms of toxic goiter (hyperplastic toxic goiter and toxic adenoma), which were prepared for operation with potassium iodide. The general improvement noted, as well as the specific improvement in pulse and metabolic rate, paralleled the improvement obtained by compound solution of iodine. The clinical charts of several representative cases are exhibited which graphically show the preoperative response of thyrotoxicosis to potassium iodide. The author concludes from the evidence obtained in a surgical research laboratory that free iodine, to be absorbed, must be converted into an iodide, and from his clinical investigation, that it appears unnecessary to have free iodine "loosely combined," to which quality has been ascribed the effect of the administration of compound solution of iodine on hyperthyroidism.

Thyroid Crisis.—According to the Greenes, thyroid crisis is one of the most serious complications of hyperthyroidism. As a rule this condition occurs in the primary toxic, or exophthalmic, goiter. Thyroid crisis usually occurs in patients known to have hyperthyroidism but in whom no treatment has been sought or in whom inadequate treatment has been instituted. It may occur in individuals in whom there is no suspicion of thyrotoxicosis. A crisis may come on immediately after operation or several days later. Acute hyperthyroidism may be ushered in by physical fatigue, by psychic stimulation or as a result of an intercurrent infection, or may appear after some surgical condition often trivial. Measures not aimed to relieve the hyperthyroidism should be postponed until after thyroidectomy has been performed. Adequate preoperative therapy will in the majority of cases prevent postoperative acute thyroidism. The picture of crisis may appear suddenly with no premonitory manifestations, or make its appearance slowly with definite symptoms. The mechanism whereby a crisis is set into motion is not known. The condition must be recognized early and proper therapy instituted immediately or death will frequently result. Treatment consists of iodine, fluids, dextrose and morphine. After recovery from a crisis, surgical intervention should be done with caution and after one has waited long enough to get the patient in proper physical condition.

Arteriovenous Aneurysms: Effect on Heart.—Reid calls attention to the fact that arteriovenous aneurysms involving large vessels usually affect the heart. The main factor in the causation of the damage to the heart is the increased amount of blood that it has to handle. This results from the quick shunting of a large amount of arterial blood back to the heart. Another factor which is probably of importance is that there results a condition resembling aortic insufficiency, although the lesion may be far removed from the aortic valves. A case of femoral arteriovenous aneurysm, which had been present for seventeen years, is recorded. It illustrates many of the effects of this condition—cardiac hypertrophy and dilatation, Branham's bradycardiac phenomenon, disturbances of blood pressure (Hill and Flack sign), changes in the electrocardiogram, pulsating varicosities, dilated and atrophied proximal artery, capillary pulsation, very adequate collateral circulation, and so on. Excision of the aneurysm relieved completely all cardiac symptoms and caused the heart to return to a normal size. This case strongly supports the teaching of Matas that the heart should be prepared for the complete closure of the fistula by a preliminary period devoted to temporary occlusions of it. Although the abundant collateral circulation reduces to a minimum the danger of peripheral gangrene, the heart should be considered and partially adapted to the great and sudden change that will follow the operation. An intelligent patient who has practiced temporary occlusion of his own fistula is usually quite certain when it can be permanently occluded without causing any cardiac distress.

Cancer of Colon and Rectum.—Bloodgood emphasizes the fact that, in cancer of the colon and rectum, surgeons cannot with justice either to themselves or to the public assume that their responsibility begins with the preoperative preparation. The chief cause of failure to this condition is late intervention. Contributory causes are incomplete preoperative investigation in which the precancerous or cancerous lesion is overlooked by some member of the medical profession and valuable time lost. All physicians are apt to make the mistake of performing an incomplete diagnostic study before operation or an incomplete

preoperative preparation. Apparently the least important factor in the failure to cure the majority of cases of cancer of the colon and rectum is the operative skill of the surgeon. This factor may be too large but it cannot be compared with the delay on the part of the patient and the failure to recognize an operable condition on the part of the general practitioner who does not keep up with modern diagnostic methods. Undoubtedly, in cancer of the rectosigmoid colon, surgeons of less experience and skill have too large a mortality. There should be no difficulty for them to recognize these cases clinically and back out either before any operation or after an exploratory laparotomy. In the latter event they can perform preliminary appendicostomy and save the patient much time. The author recommends appendicostomy preliminary to resection of every part of the colon except the right colon when the cecum is removed. His impression is that lateral anastomosis, when possible, is safer than end to end. In tumors of the rectum and rectosigmoid, pathologic studies and final results demonstrate that it is unnecessary for a cure to give the malignant tumor of the colon or rectum wide margins of intestine. The restricted operation should be chosen when possible, if it promises lessening of the operative risk. For the same reason, operation in stages should be chosen and blood transfusion freely employed. One should not wait for symptoms of shock but anticipate the collapse. Also, it should be remembered that the rectal tumor can be properly removed through the sacral route. It is possible to perform an abdominal colostomy if the sacral one is unsatisfactory. Many of the most experienced and best trained diagnosticians often curtail the preoperative diagnosis the moment something definite is found indicating surgical intervention. Many experienced surgeons, before operations on the colon, do not give the patient proper preoperative preparation. If there is obstruction, colostomy is indicated, which can be part of a preoperative diagnosis and preparation, because the obstruction must be relieved. The author recommends appendicostomy without exploration to determine the position of the tumor unless there are definite symptoms indicating the necessity of further exploration.

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*Observations on Bone Formation in Abdominal Wall Following Transplantation of Mucous Membrane of Urinary Bladder: Preliminary Report. A. C. Abbott and A. M. Goodwin, Winnipeg, Manit.—p. 393.
*Liver Extract in Treatment of Pernicious Anemia. E. W. McHenry, D. L. MacLean and C. H. Best, Toronto.—p. 397.
Hypothalamic Mechanisms. J. Beattie, Montreal.—p. 400.
*Coronary Thrombosis. J. A. Oille, Toronto.—p. 405.
*Some Unusual Manifestations of Insulin Reaction. J. Feigenbaum, Montreal.—p. 410.
Nembutal: An Antidote. D. E. Cameron and R. McCulloch, Brandon, Manit.—p. 413.
Hypothyroidism. G. F. Strong, Vancouver, B. C.—p. 415.
Intestinal Obstruction. G. Miller, Montreal.—p. 420.
Intestinal Obstruction Caused by Normal Pregnancy. M. Blair, Vancouver, B. C.—p. 426.
*Treatment of Distention Following Abdominal Operation in Children. W. L. Denney, London, Ont.—p. 430.
*Intracapsular Fractures of Neck of Femur. D. B. Phemister, Chicago. —p. 431.
Use of Iodized Oil by Sanatorium Physician in Diagnosis of Bronchial Affections. S. Pritchard, Battle Creek, Mich.—p. 433.
Roentgen-Ray Diagnosis of Genito-Urinary Tract. W. L. Ritchie, Montreal.—p. 435.
Classification of Râles. H. M. Kinghorn, Saranac Lake, N. Y.—p. 438.
General Significance of Visual Tests. E. Jackson, Denver.—p. 445.
Undulant Fever in British Columbia. H. W. Hill, Vancouver, B. C.—p. 449.
Mental Automatism, Provocative Factor of Chronic Hallucinatory Psychoses. Jean Saucier, Montreal.—p. 452.

Bone Formation in Abdominal Wall Following Transplantation of Mucous Membrane of Urinary Bladder.—Abbott and Goodwin report the case of a man who developed an extensive sheet of bone in his abdominal scar following a two-stage prostatectomy. They also report the results of an investigation to determine the type of bony growth produced when the mucous membrane of the bladder or all its layers are transplanted into the abdominal wall. Up to the present time they have transplanted mucous membrane or the full thickness of the bladder wall into the layers of the abdominal wall in twenty-six dogs. It was found that, following the transplantation of the mucous membrane of a dog's bladder into the connective tissues of striated muscle, fascia and fatty fibrous connective tissue, an epithelium-lined cyst is formed. On about the twentieth day, bone makes its appearance next to the newly formed epithelium and reaches its highest point of development in about sixty days. The newly formed bone is strictly limited to the newly formed epithelium and never infiltrates the surrounding tissues. This in no way resembles the bony growths that occur in abdominal scars and heretofore have been classified as myositis ossificans. These are not cystic and are frequently of large size. At the present time there is no evidence that mucous membrane of the human bladder when transplanted into the abdominal wall will produce bone.

Liver Extract in Treatment of Pernicious Anemia.—McHenry and his associates present the results obtained when extracts prepared in the Connaught Laboratories of the University of Toronto were employed in a series of forty-three persons with pernicious anemia. The extract produced by this laboratory has been made by a standard method since April, 1928. The procedure employed is a modification of that developed by the Harvard group, and is as follows: Fresh beef liver is minced and extracted with water adjusted with sulphuric acid to secure p_H 5.0. The mixture is heated to 60 C., to coagulate the albumin, and filtered. The filtrate is concentrated in a vacuum still at low temperature. The concentrate is poured into sufficient alcohol to give a concentration of 55 per cent alcohol. A precipitate, shown by tests to be inactive, is removed by filtration. Sufficient alcohol is then added to the filtrate to give a concentration of 95 per cent. The precipitate thus produced is dried in a vacuum oven and pulverized. There would seem to be little chance of such an extract changing in potency from batch to batch, unless there is some seasonal or other variation in the individual livers. There is at present no evidence of any such change, and with the large number of livers used in each batch there would seem to be little likelihood of any such individual variation being great enough to affect the potency. Every effort has been made to standardize the procedures used in the preparation of this material and to prepare for distribution a homogeneous mixture of numerous individual lots. From this point of view, therefore, there is no reason to suspect any change in potency between the various lots of extract. During the year 1927, liver extract was prepared in these laboratories and distributed gratuitously. Since that time sufficient material for one month's treatment has been made available without charge to physicians who have suitable patients under their care and who are willing to cooperate in the testing. In cases in which it is not convenient for the physician to make reticulocyte counts, slides stained with brilliant cresyl blue are provided. Blood smears made on these slides by the physician before and every second day for two weeks after the beginning of treatment are returned to the laboratory, where the reticulocytes are counted. Hemoglobin determinations and red cell counts are made before and at regular intervals after treatment is started. In spite of numerous attempts to develop other procedures, the clinical test is the only reliable method at present available for determining the potency of the extract. Evidence of the constant potency of this extract is available from the results obtained in the group of forty-three patients on whom were tested various lots.

Coronary Thrombosis.—Oille emphasizes the fact that coronary thrombosis must be differentiated from angina pectoris. The pain of angina is less severe. It is frequently described as only a tightness, an uncomfortable feeling, or a compression or constriction in the chest on exertion or excitement. It lasts only a few minutes, rarely as long as half an hour. The pain of coronary thrombosis, on the other hand, tends to occur lower down the sternum, is more often bilateral, and is more widespread than that of angina. It is usually much more severe and lasts for hours or days instead of minutes. Patients with angina stop and stand still in the attack, while some patients with coronary thrombosis are restless and cannot remain in bed. In cases of angina the following distinctive features of coronary thrombosis are always absent—severe dyspnea, changes in pulse rate and blood pressure or heart sounds, vomiting, shock, signs of failing circulation, fever and leukocytosis. Electrocardiographic changes occur in angina, but they are temporary, lasting only a few minutes. The importance of distinguishing coronary thrombosis from angina

is illustrated by the fact that the operative mortality in coronary thrombosis is six times as high as it is in angina pectoris.

Unusual Manifestations of Insulin Reaction.—Feigenbaum presents a case that demonstrates some unusual neuropsychiatric manifestations of an insulin reaction. Clinical and experimental evidence is offered to indicate that the nervous system is primarily involved in the symptomatology of an insulin reaction. An insulin reaction is not always accompanied by hypoglycemia, and it does not always respond favorably at once to the administration of dextrose. The dose of insulin administered usually determines the duration of the insulin reaction. The prognosis of a severe insulin reaction is good if the patient receives adequate treatment. The underlying mechanism of an insulin reaction still remains obscure.

Distention Following Abdominal Operation in Children.—Denney states that, by the use of diathermy, troublesome distention following abdominal operations may be controlled. This procedure is most useful in those cases in which, following rupture of the appendix, the distention and toxic state become pronounced and dangerous. There is no difficulty in its management. It causes the patient no physical or mental discomfort, even acting as a soporific. It can be used as often as is necessary, and adds no extra burden to the circulatory system, as may be the case when hypodermic medication is used. In those cases in which toxicity is marked, a saline-dextrose solution intravenously may be of assistance in overcoming the toxemia and increasing peristalsis.

Intracapsular Fractures of Neck of Femur.—According to Phemister, after intracapsular fracture of the neck of the femur the proximal fragment, which consists largely of head, may remain alive, receiving its nourishment through the internal portion of the capsule or round ligament, or it may die from interruption of the circulation. The percentage of cases in which it becomes necrotic is not definitely known, because of lack of studies on material derived from necropsy and operation and because of failure to utilize the roentgen rays in the recognition of necrotic heads. However, it is known that it dies in a considerable percentage of cases. In either event the fracture may unite or remain ununited, so that there is one of four conditions with which to deal: (1) a live head with union, (2) a live head with nonunion, (3) a dead head with union, and (4) a dead head with nonunion. As a result of the utilization of the knowledge of the pathology of these cases in roentgen interpretation it is usually possible to say after the lapse of several weeks from a study of roentgenograms whether the head has died or remained alive. It has been found that there is more or less creeping substitution of the dead bone by new bone. In the act of replacement of the dead head by living bone in the cases in which nonunion has resulted, new bone is formed from the invading connective tissue by metaplasia of the fibrous into bony elements. The roentgen determination of whether the head is alive or necrotic is based on the difference in density changes in the two conditions. If the head remains alive it shows a reduction in density as a result of atrophy of disuse during the period of treatment, and subsequently, if function is not restored to normal. If the head dies, it of course cannot undergo atrophy of disuse; and density changes result only from bony absorption by invading connective tissue and replacement by new bone. Absorptive and reconstructive changes in the necrotic head usually come about much more slowly and unevenly than is the case of atrophy of the living head. Consequently, in most cases it is possible to determine from roentgenograms taken after three months has elapsed whether the head has died or remains alive.

Canadian Public Health Journal, Toronto

23: 153-202 (April) 1932

Trends in Bathing Beach and Swimming Pool Sanitation. F. R. Shaw.—p. 153.

Studies on B. Dysenteriae Sonne. Marion M. Johnston and Mildred J. Kaake, Toronto.—p. 159.

Need for Uniformity in Vital Statistics. H. B. French.—p. 167.

Observations on Rural Public Health Work in Ontario. D. R. McClenahan, Hamilton, Ont.—p. 170.

Statistics in Field of Mental Hygiene. H. B. Spaulding, New York.—p. 174.

Maternal Mortality: General Survey. J. T. Phair.—p. 179.

Illinois Medical Journal, Chicago

61: 269-360 (April) 1932

*Importance of Quantitative Diets in Diabetes and Obesity. W. H. Nadler, Chicago.—p. 311.

Diagnosis and Treatment of Precancerous Lesions of Breast. M. Cutler, Chicago.—p. 313.

*Surgery Versus Radiation in Benign Uterine Hemorrhage. E. H. Ochsner, Chicago, and J. K. Sullivan, Cleveland.—p. 316.

Oral Vaccination. J. G. Finder and J. Simons, Chicago.—p. 321.

Doctors Who Have Achieved Fame in Other Fields Than Medicine. A. Levinson, Chicago.—p. 329.

Rupture of Spinatus Tendons and Capsule, Repaired by New Operation. E. B. Fowler, Evanston.—p. 332.

Chronic Seminal Vesiculitis. H. C. Rolnick, Chicago.—p. 334.

Fibrolipomatosis of Kidney: Report of Case. H. L. Kretschmer, Chicago, and L. E. Pierson, Sioux City, Iowa.—p. 336.

Conservative Use of "Radium Puncture." F. E. Simpson and G. R. Dunlevy, Chicago.—p. 341.

Commercial Roentgen Laboratory: Some Good Reasons Why They Should Not be Tolerated or Patronized. I. S. Trostler, Chicago.—p. 343.

*Use of Thyroid and Suprarenal in Diatheses of Infancy (Clinical Study). O. Barbour, Peoria.—p. 345.

Gunshot Wound of Lower Third of Humerus with Musculospiral Paralysis: Bone Defect Repaired by Interposition of Cortical Fragment Without Use of Foreign Material. G. S. van Alstine, Chicago.—p. 355.

Quantitative Diets in Diabetes and Obesity.—According to Nadler, the conversion of the daily food allowance as expressed in grams of protein, carbohydrate and fat into food portions and their division into meals seems to be the chief obstacle to the more widespread use of quantitative diets. This relatively simple procedure has until recently been taught in few medical schools; even in hospitals it is usually left entirely to the dietitian, with the result that many clinicians have had little opportunity of calculating diets. Experience in teaching medical students has proved that this information is easily acquired by actual practice. All that is required is a table of food values, a food scale (marked in grams) and practice. Analyses of most of the foodstuffs used in this country can be obtained by writing to the Bureau of Records, Department of Agriculture, Washington, D. C., for Bulletin 28, by Atwater and Bryant, and enclosing 10 cents in coin. The simpler tables of food values prepared by Joslin and found in his invaluable Diabetic Manual serve admirably; in particular, one should memorize or have at hand a list similar to Joslin's table of caloric values for common foods as a basis for rapid calculation.

Surgery Versus Irradiation in Benign Uterine Hemorrhage.—From a review of the recent literature on the subject, Ochsner and Sullivan have come to the conclusion that there is a gradual swing toward surgery and away from irradiation in the treatment of these conditions. It would seem evident that when the number and frequency of complications are taken into consideration and all the contraindications listed by the various authors are scrupulously observed, the number of cases of benign uterine hemorrhage in which irradiation is indicated is very limited. The authors emphasize again the possibility of a persisting anemia and the danger of severe nervous disturbance following irradiation and the advantages of a modification (packing of the uterine cavity for two minutes with plain sterile gauze saturated with solution of formaldehyde-U. S. P.) of the Hill treatment for premenopausal bleeding.

Use of Thyroid and Suprarenal in Diatheses of Infancy.—According to Barbour, there is much clinical and laboratory evidence that the constitutional diatheses of infancy are manifestations of a neurochemical imbalance of the congenitally unstable physiologic activities of the infant. There is some pathologic and clinical evidence that this neurochemical imbalance is the result of a disturbed equilibrium between the secretions of the endocrine glands. Therapeutic results presented by the author for confirmation indicate that the endocrine dysfunction lies primarily in the thyroid and suprarenals.

Iowa State Medical Society Journal, Des Moines

22: 159-204 (April) 1932

Chronic Suppuration of Middle Ear. W. J. Foster, Cedar Rapids.—p. 167.

Concealed Gastro-Intestinal Hemorrhage. J. M. Berkman, Rochester, Minn.—p. 170.

Serious Complications Following Simple Antromeatal Operation: Case Reports. S. D. Maiden, Council Bluffs.—p. 172.

Coronary Thrombosis with Cardiac Infarction. H. L. Smith, Rochester, Minn.—p. 176.

Our Poor Relations. S. G. Hands, Davenport.—p. 178.

Journal of Nervous and Mental Disease, New York

75: 361-472 (April) 1932

Problem of Traumatic Parkinsonism. A. E. Kulkov, Moscow, U. S. S. R. —p. 361.
*Plantar Reflex, Its Signification, Methods of Its Examination and Causes of Some Diagnostic Errors. T. Dosužkov, Czechoslovakia.—p. 374.
Body Weight in One Hundred and Thirty-Six Individuals Diagnosed as Essential Epileptics. S. M. Weingrow, New York.—p. 384.
Cerebral Changes in Pneumococcus Septicemia: Report of Case with Necropsy. H. M. Zimmerman and H. Yannet, New Haven, Conn. —p. 386.

Plantar Reflex.—Dosužkov believes that with regard to the plantar reflex there are two kinds of errors: those the result of a wrong examination and those the result of an incorrect appreciation of the rightly obtained facts. The anomaly of the methods consists in the following: (1) in an incorrect position of the patient during the examination, namely, with the flexed knee joint (when a plantar flexion of the toes displays itself even in cases of lesions of the pyramidal system); (2) in the using of an unsuitable tool for examination (mostly the handle of a neurologic hammer), whereby the positive Puusepp's phenomenon appears also in the healthy persons, and (3) in the examination of the reflex from the part of the foot-sole below the toes (whereby the positive Babinski phenomenon appears in the healthy person, too). The cause of errors in appreciating the results of the examination consists in the ignoring of the "physiologic Babinski," "peripheral Babinski," "pseudo-Babinski," "pseudo-Puusepp" and "pseudopathologic Babinski."

Journal of Thoracic Surgery, St. Louis

1: 339-450 (April) 1932

Study of Bronchial, Pulmonary and Lymphatic Circulations of Lung Under Various Pathologic Conditions Experimentally Produced. Mary E. Mathes, E. Holman and F. L. Reichert, San Francisco.—p. 339.
*Internal Drainage of Lung Abscess by Extrapleural Compression. F. S. Dolley, Los Angeles.—p. 363.
Bronchial Stenosis. L. Eloesser, San Francisco.—p. 373.
Bronchiectasis. H. Ballon, J. J. Singer and E. A. Graham, St. Louis. —p. 397.
*Closed Endobronchial Anesthesia in Thoracic Surgery: Preliminary Report. J. W. Gale and R. M. Waters, Madison, Wis.—p. 432.
*Multiposition Bed for Continuous Postural Drainage. J. J. Singer, St. Louis.—p. 438.

Internal Drainage of Lung Abscess.—Dolley calls attention to the fact that it is chiefly among the cases of lung abscess in which the pneumonitis surrounding the abscess is still extensive or continues to extend that one finds the great percentage of operative deaths, and it is particularly for this type that he offers the following procedure: Its principle is based on continuous extrapleural pulmonary compression against the involved area in a direct line toward the draining bronchi to aid collapse and drainage of the lung tissue surrounding the area of liquefaction and necrosis without decreasing to any appreciable extent the intrathoracic coughing efficiency. The technic is as follows: The location of the abscess with its surrounding pneumonitis is determined by roentgen examination; the direction of the lobar bronchus draining the suppurative area is determined by bronchoscopy. A site in a direct line with the bronchus draining the involved area is located at the point where the abscess is nearest the lung surface. Under local anesthesia, short portions of three or even four ribs are excised together with their intercostal bundles, leaving for the floor of the wound the parietal pleura clear of muscle, vessels and nerves except for the periosteums of the removed ribs, which are left in situ. The parietal pleura is not freed beyond the limits of the wound, since too great collapse may interfere with bronchial drainage by the falling together of the smaller draining bronchi already softened by inflammation. The wound is packed very tightly with continuous five-inch dry gauze and is closed without drainage. The area deprived of rib sections is strapped tightly with adhesive plaster in order to restore as nearly as possible a solid chest wall or counter-pressure in coughing. The wound is not opened for from fourteen to eighteen days unless infection demands it. It is then opened widely and the packing is removed. It is at once repacked with gauze saturated in some antiseptic solution and left wide open. The packing is changed every two days until rib regeneration has firmly occurred with the ribs in the compressed position. If the collapse obtained by this procedure is insufficient, at a second stage another adjoining area is deprived of its ribs to obtain further collapse, and still another stage if deemed advisable. Gauze compression, however, is limited to its original site. After the primary compression operation, further procedures are in the nature of well circumscribed thoracoplasties, and their number depends on the area required for collapse to produce continuous improvement to a cure.

Closed Endobronchial Anesthesia.—According to Gale and Waters, closed endobronchial anesthesia has been employed in several experimental animals for the removal of different lobes of the lung, and in one patient for the removal of a mediastinal tumor. Artificial respiration may be maintained in the one lung with perfect control of its respiration and minute-volume respiratory exchange. Intrapulmonary pressure is measured by a side tube to a manometer. The incorporation of the closed carbon dioxide absorption technic assures a warm moist anesthetic atmosphere at all times. The shock usually encountered on the sudden creation of an open pneumothorax has been slight. This has been demonstrated by the blood pressure and pulse rate remaining constant. The irregular and violent respiratory movements, so often seen, have been replaced by slow, regular and deep breathing. Exposure is simple for the surgeon because the lung in the operative field is immobile. Chances of infection are reduced because a sucking wound has been entirely eliminated. Little chance exists for infected secretions to be squeezed into the trachea because the bronchus is blocked. Although the method has been employed in a series of cases too small from which to draw conclusions, the evidence so far obtained gives promise that the closed endobronchial type of anesthesia is a most practical method to employ in intrathoracic operations in which the pleural cavity must be opened.

Multiposition Bed for Continuous Postural Drainage.—The advantages of the multiposition bed described by Singer are as follows: 1. Almost any desired position for use in postural drainage is obtained by little effort on the part of the operator and no effort at all on the part of the patient. 2. It permits one to carry out either intermittent or continuous postural drainage. 3. A regular standard bed is used with the fittings, which make them inexpensive.

Kansas Medical Society Journal, Topeka

33: 111-148 (April) 1932

Methods of Handling Patients at State Sanatorium. C. F. Taylor, Norton.—p. 111.
Some Problems in Health Education. E. F. Morris, Hays.—p. 115.
Vincent's Infection: Analysis of Twenty-Six Hospitalized Cases. C. A. Hellwig, Wichita.—p. 120.
Modern Functions of County Medical Society. W. J. Burns, Detroit. —p. 125.

Medical Journal and Record, New York

135: 313-364 (April 6) 1932

Clinical Aspects of Sporadic Hepatitis: Nonleptospiral, Nonenteroid, Infectious Jaundice. N. Toomey, Palmyra, Mo.—p. 313.
Acute Yellow Atrophy of Liver: Acute Necrosis of Liver. S. Weiss, New York.—p. 316.
Is Surgical Restoration of the Aged Face Justified? Indications: Method of Repair: End-Results. J. W. Maliniak, New York.—p. 321.
History as an Aid in Diagnosis. H. Hallarman, New York.—p. 324.
Vitamins: Their Rôle in Prevention and Treatment of Disease. H. F. Langhorst, Elmhurst, Ill.—p. 326.
Macrocosm and Microcosm. H. Goodman, New York.—p. 329.

Minnesota Medicine, St. Paul

15: 217-294 (April) 1932

Following Up Sanatorium Patients. G. T. Palmer, Springfield, Ill. —p. 217.
Outline of Some Advantages and Disadvantages of Various Agents Used in Anesthesia. J. S. Lundy, Rochester.—p. 219.
Pocket Flap: Safest Method for Extraction of Senile Cataract. C. N. Spratt, Minneapolis.—p. 221.
Laryngeal Emergencies in Infants and Children. K. A. Phelps, Minneapolis.—p. 227.
Spontaneous Pneumothorax. W. H. Long, Fargo, N. D.—p. 234.
Heart Disease in Children. J. F. Borg, St. Paul.—p. 237.
Treatment of Rickets. O. W. Rowe, Duluth.—p. 244.
*Relief of Pain in Advanced Tuberculosis of Larynx by Means of Surgery. M. Nordland, Minneapolis.—p. 249.
*Mucocele of Appendix: Report of Case. C. Mayo 2d and J. U. Fauster, Jr., Rochester.—p. 254.

Tuberculosis of Larynx.—Nordland believes that resection of the superior laryngeal nerve is the surest method of removing dysphagia in patients with laryngeal tuberculosis. The operation presents no technical difficulties and does not cause any severe secondary phenomena. It can be done primarily on

both sides and is easily borne by the patient. It has a definite symptomatic value and may have a curative possibility. The operation is suitable for other painful inflammatory processes in the larynx.

Mucocele of Appendix.—Mayo and Fauster review seventy cases of mucocele of the appendix. In their clinical analysis, no definite diagnostic point was revealed. The most significant facts are the history of distress and palpable mass in the right lower abdominal quadrant. With this present, mucocele of the appendix should always be considered. In uncomplicated cases, the condition is relatively benign. Although mucocele may be a primary type of malignant tumor, its growth is exceedingly slow, and complicating factors are rare. Rupture of larger mucoceles frequently results in the formation of pseudomyxoma peritonaei. The treatment in the uncomplicated case is appendectomy, and the prognosis is good.

Missouri State M. Assn. Journal, St. Louis

29: 155-192 (April) 1932

Functions and Activities of Medical Defense Committee of Missouri State Medical Association. C. E. Hyndman, St. Louis.—p. 155.
Encephalitis Following Vaccination Against Smallpox and Coincident with Attack of Chickenpox: Report of Case. C. A. W. Zimmermann and J. H. Cochran, Cape Girardeau.—p. 158.
Misguided Philanthropy. G. H. Mathae, St. Louis.—p. 160.
*Mineral Oil, Its Use and Abuse as Laxative. S. E. Newman and G. E. Gruenfeld, St. Louis.—p. 162.
Argument for Better Prenatal Care. W. Stacy, St. Joseph.—p. 164.
Leprosy in Hawaii. G. B. Tuttle, Kalaupapa, Hawaii.—p. 166.

Liquid Petrolatum as a Laxative.—Newman and Gruenfeld call attention to the fact that liquid petrolatum is emulsified in the intestinal canal and thoroughly mixed with the chyme. It constitutes a vehicle for the formed elements of the feces that cannot be absorbed. The therapeutic effect in constipation is brought about by the increase and maintenance of the volume of feces and possibly by a stimulation of the intestinal musculature during the emulsification and mixing of the oil with the chyme, especially in the cecum and ascending colon. Excessive quantities of the oil that cannot be emulsified and incorporated in the chyme are eventually transported into the distal portion of the colon as a liquid accumulation and may provoke peristaltic reactions which upset any therapeutic benefit.

New England Journal of Medicine, Boston

206: 717-770 (April 7) 1932

*Peptic Ulcer: Its Treatment by Roentgen Ray. E. S. Emery, Jr., Boston.—p. 717.
Colles Fracture. D. J. Duggan, Boston.—p. 721.
Unhappiness and Mental Disease. D. Gregg, Wellesley, Mass.—p. 725.
Micromethod for Determination of Blood Sugar. O. Folin, Boston.—p. 727.
Three Episodes in Medical Education at Middlebury College (1810-1837). F. C. Waite, Cleveland.—p. 729.

Peptic Ulcer.—Emery gives the case histories of six patients with peptic ulcers of the jejunum and two with ulcers of the duodenum that he treated with roentgen rays. The results were satisfactory in four, questionable in two and unsatisfactory in two. In six there was an increase in pain for a week or ten days; the pain then subsided. In four there was a complete remission for a varying period of from six weeks to several months. Two patients continued to have pain, and in one of these a perforation occurred. In all the cases there was a drop in the acid, and temporary achlorhydria developed in four. It was observed that in six patients the amount of pain and acidity roughly paralleled each other. The author believes, as a result of his experiences with these cases, that roentgen therapy may be a useful adjunct to the treatment of peptic ulcer in a small, selected number of patients.

Philippine Journal of Science, Manila

47: 425-570 (April) 1932. Partial Index

Antimosquito Sprays. R. L. Holt and J. H. Kintner, Manila.—p. 433.
Control of Anopheles Minimus Mosquito Larvae in Philippines by Stranding and Flushing: First Report. P. F. Russell, Manila.—p. 439.
Blood Groups in Philippine Monkeys. H. Hirano, Manila.—p. 449.
Experimental Inquiry into Possibility of Transmission of Yaws by Leeches. I. Miyao, Manila.—p. 463.
Composition of Philippine Rice Oil (Hambas Variety). A. O. Cruz, A. P. West and N. B. Mendiola, Manila.—p. 487.
Observations on Life Histories of Euparyphium Murinum Tubangui, 1931, and Echinostoma Revolutum (Froelich, 1802), (Trematoda). M. A. Tubangui, Manila.—p. 497.

Southern Medical Journal, Birmingham, Ala.

25: 325-440 (April) 1932

Endometriosis. W. H. Goodwin, University, Va.—p. 325.
Pathologic Observations in Eclampsia. R. A. Ross, Durham, N. C.—p. 333.
Forty Years' Experience in Operating on Bladder Neck. E. L. Keyes, New York.—p. 336.
Transurethral Correction of Prostatic Obstruction. T. M. Davis, Charlotte, N. C.—p. 345.
Open Reduction of Congenital Dislocation of Hip. F. C. Kidner, Detroit.—p. 350.
Acute Osteomyelitis. E. D. Fenner, New Orleans.—p. 355.
Ocular Manifestations in Cranial and Intracranial Injuries. A. O. Pfingst, Louisville, Ky.—p. 357.
Malignancy of Upper Maxilla. H. Dupuy, New Orleans.—p. 362.
Purulent Pericarditis: Report of Seven Cases. R. J. White, Fort Worth, Texas.—p. 364.
Suture Material for Hernia Repair, with Especial Reference to Preserved Fascia Strips. A. R. Koontz, Baltimore.—p. 372.
Cancer of Large Bowel. J. L. Jelks, Memphis, Tenn.—p. 380.
Carbon Dioxide in Treatment of Acute Bronchitis and Early Pneumonia. J. F. Alison, Selma, Ala.—p. 386.
Ganglion-Roentgen-Ray Study and Treatment. H. Hailey, Atlanta, Ga.—p. 389.
Division of Both Phrenic Nerves for Relief of Spasm of Diaphragm Following Encephalitis. R. Greene, Jacksonville, Fla.—p. 392.
Secondary Anemias and Their Treatment. C. W. Dowden, Louisville, Ky.—p. 394.
*Copper and Iron Requirements in Infancy. A. P. Bloxsom, Houston, Texas.—p. 401.
*Insulin Fattening: Late Results in Sixty-Three Cases. E. S. Nichol, Miami, Fla.—p. 405.
Diagnosis and Treatment of Diabetic Coma. I. I. Lemann, New Orleans.—p. 411.
*Blastomycosis of Lungs. W. R. Brooksher, Jr., Fort Smith, Ark.—p. 412.
Problem of Human Carrier. J. L. Jones, Louisville, Ky.—p. 416.
Sporadic Hepatitis (Nonleptospiral, Nonenteroid, Infectious Jaundice). N. Toomey, Palmyra, Mo.—p. 423.
Introduction of Medical History into General Medical Curriculum. C. S. Burwell, Nashville, Tenn.—p. 427.
Public Health in General Medical Curriculum. S. Graves, University, Ala.—p. 430.

Copper and Iron Requirements in Infancy.—Bloxsom reports that the administration of copper in conjunction with iron for hemoglobin stimulation to a series of well infants showing a decrease in hemoglobin produced sufficient evidence of its value to make it worth while to report the results as a means of stimulating further study along this line. A series of fifty-seven infants were fed copper and iron daily in the form of copper sulphate and iron and ammonium citrate. This group of fifty-seven infants showed an average increase of from 5 to 15 per cent in hemoglobin over a group of 104 infants not receiving copper and iron. Copper is apparently a necessary element in the nutrition of the human body and must be supplied in sufficient quantities in conjunction with iron to the growing infant. The evidence presented in this study is in apparent accord with the experimental evidence in animals that there is a marked increase in hemoglobin when copper is added to a diet containing iron. The marked increase in hemoglobin response of infants given copper and iron apparently indicates that many infants suffer from a partial deficiency of these necessary elements in their early diets and that a substance rich in these hemoglobin regenerating factors may be of value as a routine addition to the diet after birth.

Insulin Fattening.—Nichol's report includes sixty-three cases, thirteen of which were reported in 1927. Forty-eight patients made satisfactory immediate gain with insulin, ranging from 5 to 30 pounds (11 to 66 Kg.). Of these forty-eight patients, twenty-three maintained their gain three months or less, eight for as long as six months, seven for one year, three for three years, and one for four years. Six cases were not followed. Many patients noted a tonic effect from insulin out of proportion to the gain in weight, making it difficult to tabulate the total effect of treatment.

Blastomycosis of Lungs.—Brooksher is of the opinion that primary fungous infection of the lungs is doubtless more common than is generally suspected. The possibility of such infection should be considered in cases presenting evidence of pulmonary tuberculosis but in which the tubercle bacillus cannot be recovered from the sputum. No characteristic physical, clinical or roentgenologic observations are noted. Further study roentgenologically may indicate in which chests a suspicion of its presence should receive confirmation by bacteriologic procedures.

Surgery, Gynecology and Obstetrics, Chicago

54: 605-732 (April) 1932

*Rôle of Bile in High Intestinal Obstruction. E. B. Benedict, Boston; C. P. Stewart, Pittsburgh, and P. N. Cutner, Edinburgh, Scotland. —p. 605.

*Method for Plastic Reconstruction of Common Bile Duct: Experimental Study. V. L. Schrager, A. C. Ivy and J. E. Morgan, Chicago.—p. 613.

*Observations on Experimental Spinal Anesthesia. L. K. Ferguson and J. P. North, Philadelphia.—p. 621.

Presence of Epithelium in Blood Cysts of Transplanted Ovary. E. S. J. King, Melbourne, Australia.—p. 635.

*Varicose Vein Solutions: Researches in Toxicity, Slough Producing Properties and Bactericidal Action as Related to Phlebitis and Embolism. N. J. Kilbourne, W. Dodson and A. H. Zeiler, Los Angeles.—p. 640.

Changes Which Articular Cartilage of Hip Joint May Undergo. J. V. Santos, Baltimore.—p. 650.

Halban Operation for Genital Prolapse. W. Mestitz, Vienna, Austria. —p. 663.

Osteomyelitis and Compound Fractures of Pelvis: Special Technical Methods to be Employed in Treatment. H. W. Orr, Lincoln, Neb. —p. 673.

*Primary Benign Tumors of Ureter: Review of Literature and Report of Case. M. M. Melicow and H. V. Findlay, New York.—p. 680.

*Considerations of Some Infections and Degenerations of Uterine Cervix. C. H. Mayo, Rochester, Minn.—p. 690.

Prolapse of Uterus: Principles of Its Correction. C. J. Miller, New Orleans.—p. 693.

*Acute Suppurative Pleurisy in Children: Study of One Hundred and Twenty-Three Cases. M. Cohen, New York.—p. 696.

*Maggots in Treatment of Chronic Osteomyelitis, Infected Wounds and Compound Fractures: Analysis Based on Treatment of One Hundred Cases, with Preliminary Report on Isolation and Use of Active Principle. S. K. Livingston, Hines, Ill.—p. 702.

Intraperitonal Herniorrhaphy in Inguinal Hernia. P. Banerjee, Calcutta, India.—p. 706.

Bile in High Intestinal Obstruction.—The results of experiments performed by Benedict and his associates on dogs suggest that, when obstruction of the intestine is so high that no bile can be reabsorbed, benefit is derived from administration of bile below the obstruction. In obstruction well below the bile papilla, in which some reabsorption of bile is possible, there is probably no special advantage to be derived from the exhibition of bile. While these experiments would appear to indicate that a lack of bile in the segment below the obstruction is not a factor of fundamental importance in determining the fatal issue in obstructed dogs, they do not preclude the possibility of benefit being derived from the use of bile in the lower bowel in the human subject suffering from paralytic distention. The composition of bile with respect to the bile salts and the cholesterol content is apparently not altered by intestinal obstruction. When the chloride and water balance is maintained, the length of survival of an obstructed dog seems to depend almost entirely on (1) the exact level of the obstruction below the bile papilla and (2) the fat reserve.

Plastic Reconstruction of Common Bile Duct.—Schrager and his associates describe a new method for the plastic reconstruction of the common bile duct. A viable tube from 1 to 2 inches (2.5 to 5 cm.) long is made from a flap of pyloric mucosa. This tube may be anastomosed either to the gallbladder or to a biliary duct. The gastric orifice of the tube is constructed to prevent regurgitation. The authors have performed the operation successfully in a number of dogs without postoperative complications appearing within a period of from two to three months.

Experimental Spinal Anesthesia.—Observations made by Ferguson and North on dogs anesthetized by the subarachnoid injection of procaine hydrochloride at varying levels permit the following conclusions: 1. Accompanying a typical anesthesia, there is a fall in blood pressure averaging 56 per cent, a slowing of the pulse rate, and a diminution in the respiratory movements of the thorax. 2. The fall in blood pressure cannot be explained on the basis of a splanchnic paralysis. Division of the splanchnic nerves produces only a slight alteration in the general blood pressure, and the typical fall of spinal anesthesia can be produced in animals with both splanchnic nerves completely severed. The entire vasomotor system participates in a vasodilatation, and the degree of blood pressure depression is in direct ratio to the number of white rami anesthetized. 3. The fall in blood pressure may be greatly ameliorated by the vasoconstrictor effect of preliminary medication with ephedrine. 4. The retardation of pulse rate is probably due to an interruption of impulses in the cardiac accelerator nerves. 5. Paralysis of motor fibers to the intercostal nerves seems to account for the depression of thoracic respiratory excursions. 6. Complete suppression of respiration occurs when procaine hydrochloride reaches the cervical portion of the cord and the medulla in sufficient concentration to paralyze the phrenic nerves or the respiratory center itself.

Varicose Vein Solutions.—According to Kilbourne and his associates, mercuric chloride and red mercuric iodide in the injection treatment of varicose veins have been fatally toxic in three cases. Metaphen is less toxic and is not likely to cause a slough. Experiments on rabbits did not indicate serious danger from toxicity in other solutions tested. Sugar derivatives, and sodium chloride, are nontoxic and relatively painless. Their use has been associated with an incidence of deaths from infection and embolism not found with quinine-urethane. Unlike quinine-urethane, they are not self-sterilizing or bactericidal. Since they are easily contaminated, they should be handled with extraordinary care in technic to prevent infection. The sloughs which they make when injected out of the vein are less serious than the salicylate and quinine sloughs. Sodium salicylate is efficient as a sclerosing agent. It is bactericidal to Staphylococcus aureus only in the strong solutions. It may cause a painful cramp after injection, and the sloughs which it makes are more serious than those following dextrose and sodium chloride. Lithium salicylate avoids the pain of sodium salicylate but is slightly more toxic and is said not to keep well in solution. Sodium morrhuate is not a toxic solution, and if injected out of the vein, the sloughs which it makes are not so serious as the salicylate and quinine sloughs. It is not bactericidal or self-sterilizing. Quinine-urethane is highly efficient as a sclerosing agent and, even when diluted, is bactericidal to Staphylococcus aureus. It has a perfect mortality record, possibly because of its bactericidal action in preventing phlebitis and embolism. It may be slightly toxic to occasional patients and when injected out of the vein does not give the warning of pain given by the other solutions. It causes no pain at the time of injection, and if the leg is kept bandaged, the occasional pain the next day is usually prevented. Because of its perfect mortality record, the authors regard it in expert hands the solution of choice—except in small superficial thin walled veins, provided of course it is used by those sufficiently experienced not to allow extravascular escape.

Primary Benign Tumors of Ureter.—Melicow and Findlay report in detail a case of primary benign ureteral neoplasm accompanied by a stricture of the ureter, ureteral and renal calculi, and marked dilatation and infection of the kidney pelvis and ureter. This combination of lesions has never before been reported. The literature is carefully reviewed. From their study of these cases, the authors conclude that primary benign ureteral tumors are rare lesions which are infrequently diagnosed. The treatment that is safest for the patient and offers him the best chance for a cure is primary nephro-ureterectomy.

Infections and Degenerations of Uterine Cervix.—Mayo presents evidence that the difference in death rate between total abdominal hysterectomy and subtotal abdominal hysterectomy is slight, if any, and that the higher death rate usually attributed to total abdominal hysterectomy is probably due to the selection of graver surgical risks rather than to differences due to operative technic. It is also claimed that more patients would die from the complete operation than would die from carcinoma developing in the remaining stump of the cervix. If surgeons who fear to perform total hysterectomy accept the responsibility for the future life and health of the patient and feel that the cervix is a potential source of carcinoma and often a focus of infection, it is suggested that they perform subtotal hysterectomy and follow this procedure ten or twelve days later by some method of removal of the cervix, of enucleation of the canal, or of destruction of the cervical canal by cautery. Occasionally this procedure brings to light an otherwise hidden early carcinoma. The procedure would not increase the mortality and would accomplish all that is desired. The patient who has undergone subtotal hysterectomy only should be advised to return from time to time for observation. In some cases it may be advisable to use the actual cautery on the cervical stump, or prophylactic douches, in an attempt to clear up infection. The views given were reestablished in the author's mind because of a recent review

of cases at the Mayo Clinic, which brought to light that, between January, 1910, and July, 1930, ninety-nine patients who had undergone subtotal hysterectomy there or elsewhere had presented themselves later with carcinoma of the remaining stump. In 55 per cent of these, carcinoma had developed three years or more after subtotal hysterectomy, and the longest interval was twenty-nine years.

Acute Suppurative Pleurisy in Children.—From a study of 123 cases of acute suppurative pleurisy in children and of comparative data, Cohen believes that the open method of drainage preceded by repeated aspiration is the choice method of treatment. Simple intercostal incision with open drainage is the preferred procedure in the very sick and in infants; rib resection for all other children. Local infiltration with procaine hydrochloride should be used whenever possible and can be used in most cases. The complications of empyema, and not the disease itself, seem to play the greater part as contributors to the mortality from this disease. Acute otitis media, in some cases complicated by acute mastoiditis, was the most frequent complication. Proper prophylactic care of the nasopharynx is recommended. Diligent after-care, next to the operative method, is important in surgically treating this disease. The value of operative methods must be measured not by the resulting mortality alone but by their ability to shorten the period of convalescence, to diminish the incidence of secondary operations, and to prevent chronicity.

Maggot Treatment of Chronic Osteomyelitis. — In a series of 100 cases including infections resulting from fractures, tuberculous and pyogenic chronic osteomyelitis, and an infected stump following repeated amputations, Livingston has had 95 per cent of cures with the maggot treatment. The success of this treatment does not alone depend on the scavenger activities of maggots. A series of experiments to be reported at an early date would seem to show that some additional agent is developed within the wound which is sufficiently powerful to overcome infection and permit the normal hydrogen ion concentration balance to be established. This agent is believed to be a bacteriophage.

Texas State Journal of Medicine, Fort Worth

27: 837-918 (April) 1932

Clinicopathologic Aspects of Endometropathies. W. R. Cooke, Galveston.—p. 844.
Pelvic Floor Injuries and Repairs. H. E. Lancaster, Beeville.—p. 847.
*Mixed Tumor of Lacrimal Gland: Report of Case. C. S. Sykes and H. Williams, Galveston.—p. 850.
Trachoma. C. S. Alexander, Houston.—p. 852.
Injuries of Cornea and Syphilis. V. R. Woodward, Fort Worth.—p. 856.
*Submucous Resection in Children. R. E. Windham, San Angelo.—p. 859.
Modern Preventive Medicine as Practiced Today. T. C. Terrell, Fort Worth.—p. 862.
Education and Prevention of Disease. N. M. Washer, San Antonio.—p. 867.
Dependence of Ex-Service Men on Medical Profession. H. Brennan, Laredo.—p. 871.

Mixed Tumor of Lacrimal Gland.—According to Sykes and Williams, tumors of the lacrimal gland are comparatively rare. The most common type is that of the mixed tumor. These tumors are potentially malignant and should be considered as such. The exact origin of the mixed tumor is not known, but it is thought to be derived from epithelial structures. The authors report a case of a mixed tumor of the left lacrimal gland, verified by microscopic examination.

Submucous Resection in Children. — Windham believes that submucous resection affords the best relief for a blocked nasal passage and that the procedure should not be followed by deformity if the proper precautions are observed. The ultimate effects of submucous resection in relieving nasal obstruction in children cannot be denied. Bias should be laid aside and surgical procedures selected to meet the exigencies of the case under consideration. There is a positive need for relief of children under the age of puberty who are suffering from nasal obstruction. Mouth breathing can never supplant nasal respiration; the part must do what it is intended for. No one not skilled to do the classic operation in adults should operate on children, as bad results will follow. The operation of submucous resection is not entirely successful, unless interference with drainage and ventilation of the sinuses has been remedied; but, when indicated and properly performed, the results are gratifying. The best guard against sinusitis and sinus operations is perfect drainage at a time when sinusitis can be prevented, which is attained only by a physiologically perfect nose.

Virginia Medical Monthly, Richmond

59: 1-64 (April) 1932

*Spontaneous Subarachnoid Hemorrhage: Report of Four Cases. S. D. Blackford, University.—p. 1.
Bacterial Allergy and Chronic Arthritis. W. T. Vaughan, Richmond.—p. 7.
Abdominal Drainage. S. Leigh, Norfolk.—p. 11.
Some Factors in Etiology of Vascular Hypertension. P. S. Smith, Abingdon.—p. 12.
*Transurethral Resection of Prostate: Report of Cases. W. C. Stirling, Washington, D. C.—p. 15.
Physical and Roentgen-Ray Examinations of Tuberculous Chest. J. B. Nicholls and L. R. Broome, Catawba Sanatorium.—p. 22.
Value of Roentgenogram in Study of Mastoids. C. W. Eley, Norfolk.—p. 24.
Trichiniasis: Five Cases in One Family with Results of Skin Tests. O. Swineford, Jr., and W. W. Waddell, Jr., University.—p. 28.
Abdominal Operations: Report of Nine Hundred Consecutive Operations. G. H. Reese, Petersburg.—p. 34.
Discipline in Tuberculosis. J. E. K. Flannagan, Salem.—p. 37.
Obstetric Anesthesia in Country Practice. L. H. Hoover, Clarksville.—p. 40.
Diabetic Coma: Report of Twenty-Two Cases. D. C. Ashton, Richmond.—p. 41.
Etiology and Treatment of Enuresis. J. S. Weitzel, Richmond.—p. 43.

Spontaneous Subarachnoid Hemorrhage. — Blackford states that spontaneous subarachnoid hemorrhage is apparently not a rarity although it has been neglected in American literature until recent years. It may occur at any age and is relatively common in young people. There are many possible causes for its occurrence, but a congenital cerebral vascular anomaly is probably responsible for more cases than any other single cause. Its onset is usually abrupt. The symptoms are those of a combination of mechanical pressure and meningeal irritation. A homogeneously bloody spinal fluid is always present. The immediate prognosis is grave and recurrences are not uncommon. The treatment consists of controlling the intracranial pressure and removing the irritating fluid when necessary. Of four cases presented by the author, a definite etiologic diagnosis of a congenital vascular anomaly was established by necropsy in the only fatal case. This diagnosis seems most probable in two others, and in the remaining one it may well have been the cause. All four cases were characterized by the abrupt onset of coma in otherwise healthy persons, three of whom were under 30. Headache, mental confusion and signs of meningeal irritation occurred in all those surviving. In three instances, evidence of increased intracranial pressure was obtained. Two of the patients suffered from respiratory failure presumably due to a medullary compression. All the spinal fluids were homogeneously bloody, and fever was a constant observation. Leukocytosis was present in the three cases in which a white count was done, and albuminuria, transient in character, was demonstrated in the two cases in which a urinalysis was performed within twenty-four hours after onset. There was no glycosuria in this series. Evidence of syphilis was lacking in all four. Therapeutic lumbar puncture apparently gave definite relief from meningeal symptoms in the three cases in which it was used. Caffeine seemed to relieve the respiratory failure of the fatal case. The three survivors are at present without signs or symptoms attributable to their illness.

Transurethral Resection of Prostate.—Stirling considers that in median bars, contracture and other forms of minor obstruction of the vesical outlet, transurethral resection is the method of choice. In hyperplasia of the lateral or median lobes, the obstruction can be corrected in grade I, II and III, but should not be used in grade IV or the highly vascular type of obstruction or in old, feeble subjects. In the presence of complications, such as diverticula or stone, resection may be followed by litholapaxy or excision of the diverticulum. Hemorrhage can and must be adequately controlled by using the fulgurating or spark-gap current, thus eliminating the principal hazard connected with this procedure. The mortality has been greatly lessened, the morbidity decreased and the average stay in the hospital reduced to days instead of weeks as formerly. Transurethral prostatic resection is a highly technical procedure and meets all the requirements for this type of work. By treating the patients earlier, one will greatly reduce or obviate cardiovascular, renal and the systemic derangements following massive

retention. Preliminary cystoscopy, orienting the type and character of the obstruction, is necessary. Resection is a supplement to and not a substitute for prostatectomy, each having definite, clear-cut indications.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

16: 193-256 (April) 1932

Note on Inorganic Constituents of Normal and Cataractous Human Crystalline Lenses. G. Mackay, C. P. Stewart and J. D. Robertson.—p. 193.
*"Angina Capitis." I. C. Michaelson.—p. 202.
School Myopia. A. Sorsby.—p. 217.
Refraction in Cases of Congenital Torticollis Associated with Hemiatrophy of Face. A. Sorsby and M. Shaw.—p. 222.
Device for Preventing Glare in Electric Ophthalmoscopes. N. B. Harman.—p. 225.

"Angina Capitis."—Michaelson presents a summary of the chief known facts of referred visceral pain, physiologic, clinical and experimental. On the basis of a study of the activity and innervation of the ciliary muscle, of the clinical features of ocular headache, and of an experimental relationship between the skin and the ciliary muscle, he concludes that there is a sufficient concurrence between the two sets of facts to justify the suggestion that the mechanism which underlies ciliary headache is analogous to that which gives rise to referred visceral pain in other parts of the body, more particularly that ciliary headache arises from ciliary dysfunction in the same way in which angina pectoris arises from cardiac dysfunction.

British Medical Journal, London

1: 551-598 (March 26) 1932

Chronic Pelvic Woman. A. Bourne.—p. 551.
*Oleothorax, with Observations on Twenty Cases. N. M. Munro.—p. 554.
Fulminating Meningococcal Meningitis: Recovery Following Systematic Cisternal Punctures and Polyvalent Serum. J. N. C. Ford and G. Shera, with Collaboration by J. Purves-Stewart.—p. 558.
Points in Connection with Successful Issue of Simple Prostatectomy. A. R. Thompson.—p. 560.
*Carbon Dioxide in Prophylaxis and Cure of Postanesthetic Respiratory Complications. J. R. Mackenzie.—p. 561.

Oleothorax.—Munro considers that oleothorax is the treatment of choice in suitable cases of tuberculous empyema and that it proves an alternative of the more drastic procedure of thoracoplasty in certain conditions complicating a spontaneous or artificial pneumothorax. The technic is simple and speedy with a Dieulafoy two-way syringe and flexible metal attachments. Olive oil is to be preferred to liquid petrolatum because the latter is a pleural irritant. Because of its irritant properties, aromatized oil should be added to the oil only when an effusion is being replaced, and then in graduated strengths. Discretion regarding the oil used makes complications negligible. Before a case can be considered suitable for treatment, it seems to demand requirements similar to those governing artificial pneumothorax therapy. Thus the condition of the contralateral lung and of other tissues regarding tuberculous involvement has to be considered before instituting treatment. The ideal cases are naturally few, and the author was occasionally tempted to overlook quiescent foci in other organs for the sake of determining the more immediate results of this treatment. The outlook for the more advanced case of tuberculosis is so hopeless that the patient's gratification at knowing that some treatment is being attempted seems to jusify such liberties with oleothorax.

Carbon Dioxide in Postanesthetic Respiratory Complications.—Mackenzie reports his experiences in 5,000 cases in which carbon dioxide was administered in combination with general anesthesia. Among the advantages that accrue to the surgical patient, three stand out prominently: (1) the prophylactic action of carbon dioxide against the onset of respiratory complications, irrespective of the anesthetic agent; (2) the protection afforded to patients who come up for operation with concomitant respiratory disability, and (3) the curative action of carbon dioxide when postanesthetic respiratory complications have occurred. For purposes of observation, the cases are arranged in four groups. In the first and largest group, carbon dioxide to the extent that appeared advantageous to the patient was administered in the operating room, during the induction, the maintenance and the recovery stages of gas, oxygen and ether anesthesia. In the second group, carbon dioxide was used in the induction and recovery stages of deep ether anesthesia. In the third group, carbon dioxide was used as a prophylactic against respiratory complications during the recovery stage of anesthesia in the operating room and in the ward after the operation. In the fourth group, carbon dioxide was administered as a therapeutic agent in cases of postanesthetic respiratory complications. The tendency has been for the first three groups to merge into one, and recently, as far as it has been possible, the patients have had carbon dioxide during the induction of and recovery from anesthesia, in the operating room and in the ward, at regular intervals throughout the first twenty-four to thirty-six hours after the operation. The author has evolved the following technic of administration: 1. Pulmonary ventilation is controlled and regulated to the normal during the induction and maintenance of anesthesia. 2. During the closing stages of the operation, hyperventilation and deetherization is carried out until the patient leaves the operating room. 3. In the ward the administration consists of the inhalation of carbon dioxide and oxygen for five-minute periods. These periods are continued at intervals of from four to six hours throughout the first twenty-four to thirty-six hours after the operation. 4. This periodic administration is continued if there is any evidence of respiratory complications. The percentage of carbon dioxide, the duration of the period, and the frequency of administration should be regulated according to the toleration of the individual patient. The apparatus used in the ward consists of a small platform on casters to carry one cylinder of carbon dioxide and one cylinder of oxygen, with a central standard to carry a sight feed bottle. It has proved eminently simple and satisfactory. The freedom from pain in abdominal wounds during hyperventilation with carbon dioxide as compared with the pain and distress which the patient endures in voluntary deep breathing is a marked feature of the administration.

1: 599-642 (April 2) 1932

Psychologic Interest in General Practice. F. G. Crookshank.—p. 599.
*Chronic Nontuberculous Infection of Lungs in Children. F. H. Young.—p. 604.
*Significance and Origin of Lactic Acid in Gastric Contents. I. Murray and A. B. Robertson.—p. 607.
Jejunostomy and Witzel's Operation in Treatment of Vicious Circle Vomiting. H. Donovan.—p. 609.
Idiopathic Congenital Dilatation of Common Bile Duct. E. R. Frizelle.—p. 610.

Chronic Nontuberculous Infection of Lungs in Children.—Young believes that in chronic nontuberculous infection of the lungs in children the child should be removed, if possible, from other members of the family with chronic coughs; it is probable that reinfection does take place when once the ground has been prepared. In cases in which this is impossible, an open-air school will probably produce marked benefit. Extra rest should be insisted on; the child should have long nights and should lie down for a couple of hours in the afternoon, preferably in the open air. Any definite sepsis or obstruction in the upper air passages must be dealt with. Breathing exercises are of great value; they expand the bases of the lungs and tend to permit efficient drainage. In the absence of real sunlight, artificial sunlight is usually the main method of attack for increasing the general resistance. The diet should be liberal and contain considerable quantities of vitamins. Cod liver oil and malt should always be given, and plenty of fresh fruit and vegetables. The author has found the use of dextrose to be valuable. He has been trying these children on vaccines for some time, and in certain cases there has been a benefit; on the whole, however, the results have been disappointing. When the disease has reached a more advanced stage and sputum is a prominent feature, postural drainage is beneficial. Drainage by means of a bronchoscope is only palliative, and it is impracticable to get this done often enough to be of any great use. Collapsing the lung by means of an artificial pneumothorax would be valuable if practicable, but in nearly every case adhesions prevent an adequate collapse. Evulsion of the phrenic nerve seems to be the most reasonable form of treatment in more advanced cases. Lobectomy of the affected lobe is such a severe operation that it is hardly feasible at present. Thoracoplasty in children is not satisfactory; the deformity of the chest is very severe, and the results do not seem to justify the risk. Expectorants and inhalants are disappointing; they may be of some symptomatic value in relieving the cough and making

the sputum, if it has become offensive, less so. The use of the creosote chamber is probably the most efficient method, as by this means any stagnant secretions are generally brought up. The severity of the cough, however, in a chamber of this kind frightens the child so badly that it is hardly practicable.

Significance and Origin of Lactic Acid in Gastric Contents.—Murray and Robertson report that an investigation of test meals from fifty subjects, pathologic and normal, showed the presence of lactic acid in 74 per cent. While occurring more frequently in cases of hyposecretion, it may be present even in hypersecretion. The presence of lactic acid had apparently no clinical significance. The production of lactic acid was almost certainly due to the action of Bacillus acidilactici, which was found to be present in the perfectly normal stomach.

Edinburgh Medical Journal

39: 229-284 (April) 1932

Genesis of Blood Platelets. C. H. Watson.—p. 229.
*Complement Fixation in Meningococcal Infections as an Aid to Diagnosis. H. A. Cookson.—p. 258.
Clinicopathologic Study of Carcinoma of Stomach, Using Large Microscopic Sections and Dissecting Lymphatic Spread. E. B. Benedict. —p. 263.

Complement Fixation in Meningococcal Infections.—Cookson emphasizes the fact that although the complement fixation method appears to offer further confirmation in cases diagnosed or thought to be meningococcal infections, in common with all serologic tests, it must not be considered apart from the clinical and other observations in each individual case. In the author's opinion it in no way displaces the significance of a polymorphonuclear leukocyte exudate when such is present, or the value of the estimation of chlorides when a lymphocytic preponderance occurs, for the chloride figure is rarely very low in meningococcal infections in his experience. In cases in which no alteration in the spinal fluid can be observed, the examination of the blood serum by complement fixation tests may give a clue to the condition. In difficult cases, if one or more of the triad (1) polymorphonuclear leukocytes in spinal fluid, (2) not a very low chloride content, (3) positive fixation test should be found, the author considers that the clinician should treat the patient for a meningococcal infection.

Guy's Hospital Gazette, London

46: 121-136 (April 2) 1932

*Meningitis and Meningism. J. A. Ryle.—p. 123.
Vincent's Infection. A. Bulleid.—p. 127.

Meningitis and Meningism.—Ryle believes that, while they are specific of meningeal irritation, the symptoms of meningism are nevertheless not specific of any one type or cause of irritation. This is true of all well defined symptoms. They constantly specify a type or mode of physiologic disturbance, but they do not in themselves indicate the particular cause of the disturbance. For a full diagnosis other clues must be sought in the age and the general condition of the patient, in the history, and in associated symptoms and signs. There are four main groups of cases in which meningism may be observed: (1) acute pyogenic meningitis (meningococcic, pneumococcic, streptococcic); (2) subacute meningitis complicating general tuberculosis, poliomyelitis or activated syphilis; (3) the aseptic meningitis of subarachnoid hemorrhage, and (4) the meningeal irritation or aseptic meningitis of pneumonia and otitis media in children. With ordinary clinical care it should be possible to place a case in one of these four groups, and often enough to give a correct opinion. With the aid of the lumbar puncture needle, an accurate diagnosis can generally be established.

Indian Medical Research Memoirs, Calcutta

No. **22:** 1-113 (Feb.) 1932

Studies in Avian Spirochetosis. R. Knowles, B. M. das Gupta and B. C. Basu.—p. 1.

Journal of Laryngology and Otology, Edinburgh

47: 229-296 (April) 1932

*Malignant Disease of Hypopharynx. von Eicken.—p. 229.
Fixation Abscess. G. Canuyt.—p. 235.
Note on Treatment of Functional Aphonia. C. MacMahon.—p. 243.

Malignant Disease of Hypopharynx.—According to von Eicken, malignant tumors of the hypopharynx may be divided into two groups. The first group includes tumors arising from the lateral walls of the larynx, the outer surface of the epiglottis, the pharyngo-epiglottic fold and the plica aryepiglottica. The tumors of the second group take origin from the sinus pyriformis and the lowest parts of the hypopharynx. The tumors of the first group develop more slowly and form metastases later than do those of the second group, which are of rapid growth and show early metastasis in the regional lymph nodes. Recently the French school has proposed a division of these tumors into two groups, which can be distinguished by their microscopic appearances. The first is the epidermoid or cutaneous type, which is characterized by the presence of typical epithelial pearls and prickle cells. The second is the anepidermoid or mucous type, and it shows the so-called Hollundermarkzellen, which are large polyhedral cells with so transparent a protoplasm as to produce a vacuolated appearance. True epithelial pearls are not present, but the lamizated arrangement of the so-called onion bodies, which are a constant feature of this type of tumor, may cause confusion; however, a distinction is readily made when it is observed that well marked nuclei are present. Both these types are found relatively often in the hypopharynx, but the mucous type is the more frequent.

Lancet, London

1: 709-760 (April 2) 1932

Practical Points in Diagnosis and Routine Treatment of Pulmonary Tuberculosis. P. W. Edwards.—p. 709.
*Pecten: Pecten Band: Pectenosis and Pectenotomy. A. L. Abel.—p. 714.
*Active Principle in Hog's Stomach Effective in Pernicious Anemia. J. F. Wilkinson and L. Klein.—p. 719.
Diagnosis of Diseases of Hip Joint. J. F. Brailsford.—p. 721.

The Pecten Band.—Abel states that the "pecten" is the name given by Stroud in 1896 to approximately the middle third of the anal canal. In a normal subject this has a glistening appearance, is quite smooth, and is almost entirely devoid of sweat glands. Above it is bounded by the wavy dentate or pectinate line caused by the anal papillae, and below by Hilton's white line. The pecten marks the union of the proctodeum and the hind gut. The part below the pecten is formed by an ectodermal depression named the proctodeum; the part above this line is formed from the hind gut. The pecten band is a fibrous deposit that takes the form of a circular band varying in thickness and density, completely surrounding the lower part of the anal canal, and situated between the mucous membrane of the pecten and the external sphincter muscle. In well marked instances the band of fibrous tissue can be distinctly felt and gives an impression to the examining finger such as would be obtained if a rubber umbrella ring had been inserted beneath the skin at the anal margin. The pecten band does not exist in the healthy anal canal. It is purely pathologic in origin. Passive congestion in the region of the pecten may be brought about by a number of factors. Probably the commonest is the varicosities of the superior hemorrhoidal veins. Constipation alone without the presence of hemorrhoids has an exactly similar effect, as has also spasm of the sphincter muscles. With the passage of months and years, the pecten band becomes more and more dense and prevents the proper relaxation of the sphincters. There is then difficulty in obtaining complete emptying of the rectum, the size of the caliber of the feces is diminished, and the lower half of the anal canal tends to be held immobile, while the elevating effect of the pubococcygeal part of the levator ani muscle has the effect of pulling the internal away from the external sphincter, thereby causing sometimes as much as an inch of separation between the two sphincters and still further increasing the difficulty in obtaining complete emptying of the rectum during defecation. The tighter the anal aperture becomes, the greater the straining at stool; hence any hemorrhoidal condition tends to be aggravated, and if hemorrhoids become prolapsed through the anal orifice they are apt to become strangulated by the nonyielding pecten band. As a result of this deposit of fibrous tissue in the submucosa of the pecten, the mucous membrane of this region, instead of being freely movable over the subjacent tissues, becomes anchored to it and poorly nourished with blood. This renders it much more easily damaged than in a normal subject. It is uncommon to find a fissure in a patient without a preexisting pecten band. If the anus is everted in a patient suffering from fissure, definite white strands of fibrous tissue can be discerned running circularly around the anal canal at the bottom of the

fissure; and if a portion of this tissue is taken for microscopic section it will be found to consist of fibrous tissue only. The mucous membrane of the rectum frequently becomes unhealthy in patients with long standing pectenosis; secretion of normal rectal mucus is apt to become excessive, and the patient suffers from pruritus ani. When no other pathologic condition exists in the rectum, pruritus of these patients may be cured by performing the operation of pectenotomy, the technic of which the author describes in detail.

Hog's Stomach in Pernicious Anemia.—Wilkinson and Klein have been unable to obtain stomach extracts that are hematopoietically active for the treatment of pernicious anemia by the usual methods which, when applied to liver, yield active extracts. They describe a method of obtaining active stomach extracts which involves the subjection of stomach tissue to high pressure in a special apparatus. Experiments on the fractionation of this active extract are described; it was found that the use of alcohol readily separates a precipitate which is active in the treatment of pernicious anemia while, on the other hand, the filtrate is inactive. Further experiments on the concentration of this active fraction are in progress. Some evidence showing that the active principle in hog's stomach is not identical with that present in liver is discussed. It is considered that these experiments support the clinically suggested view that the active principle in hog's stomach effective in perinicious anemia is of an enzyme-like nature. The suggestion is made that this "enzyme" acting on the proteins in a normal diet may produce a substance which is stored as the active principle in the liver until it is required for hematopoietic regeneration. For convenience the authors propose temporarily to term this substance in hog's stomach "haemopoietin."

Medical Journal of Australia, Sydney

1: 347-390 (March 12) 1932

Ganglioneuroma of Cerebrum, with an Additional Case. L. B. Cox.—p. 347.
*Occult Tuberculosis of Tonsil in Relation to Tuberculous Cervical Adenitis. R. Webster.—p. 351.
Stammering, National Tragedy: Plea for Further Research and Scientific Treatment. T. G. Leary.—p. 355.
Need for Science of Clinical Anthropology. F. Trinca.—p. 361.

Occult Tuberculosis of Tonsil in Relation to Tuberculous Cervical Adenitis.—Webster presents the results of an investigation regarding the incidence of tuberculosis in the tonsils of 132 children. Of eighty-six children exhibiting tuberculous cervical adenitis, forty, or 46.5 per cent, were shown to have tuberculous lesions in the tonsils. Among forty-six pairs of tonsils removed for simple hypertrophy or other cause apart from tuberculous cervical lymph nodes, no instance of tuberculosis of the tonsil was detected. The value of histologic diagnosis is discussed. Emphasis is laid on the fact that primary tuberculosis of the tonsil is seldom, if ever, apparent clinically. On the basis of the results of his investigation, the author concludes that tonsillectomy is clearly indicated in the treatment of tuberculous cervical adenitis.

Tubercle, London

13: 289-336 (April) 1932

*Occasional Elusiveness of Tubercle Bacillus in Gross Lung Lesions. W. M. Cumming and Winifred M. Foster.—p. 289.
*Pleural Effusion in Artificial Pneumothorax Treatment. A. P. Ford.—p. 292.
Rationale of Treatment of Pulmonary Tuberculosis by Phrenic Exeresis. M. K. Pai and K. V. Rao.—p. 295.
Simple Method of Diluting Tuberculin. J. W. Tomb.—p. 299.
Environments in Tuberculosis. H. Sewall.—p. 302.

Elusiveness of Tubercle Bacillus in Gross Lung Lesions.—Cumming and Foster stress the importance of frequently repeated microscopic and cultural examination of the sputum and, more particularly, of repeated animal experiment in many cases of pulmonary catarrh and fibrosis before one excludes, on bacteriologic grounds, the possibility of the lesion being tuberculous. As a routine, all sputums in which tubercle bacilli are not demonstrated microscopically in a direct smear after a careful fifteen minutes' search should be subjected to "concentration" by the following method: The sputum is digested in an alkaline medium, neutralized and centrifugated after the addition of two drops of egg white; smear preparations are made of the deposit and scum, if any. More than one tubercle bacillus must be demonstrated before the result is accepted as positive. Further, an attempt is made to isolate tubercle bacilli, generally on Dorset's egg medium, by direct cultural methods (after concentration by a method similar to the one described) from the sputum of every patient admitted. Guinea-pig inoculation is not used as a routine method unless, after culture has failed and repeated microscopic examinations of concentrated specimens have been negative, the result of clinical methods of investigation still leaves open the possibility that the lesion is tuberculous.

Pleural Effusion in Artificial Pneumothorax.—Ford believes that all pleural effusions complicating artificial pneumothorax are due to the breaking down of adhesions. He is led to this conclusion by the following facts: 1. Adhesions are extremely common; it is in only a small percentage of cases that an absolutely complete collapse is obtained. 2. Thoracoscopic examinations have shown that the size and strength of adhesions vary considerably. 3. Effusions occur most frequently at the commencement of the treatment; i. e., while the adhesions are being stretched. 4. A large majority of cases show marked improvement and a greater amount of collapse after the effusion occurs. 5. Cauterization of adhesions is almost invariably followed by an effusion.

Chinese Medical Journal, Shanghai

46: 115-242 (Feb.) 1932

Intestinal Complications of Pregnancy, Labor and Puerperium. J. P. Maxwell and A. I. H. Wong.—p. 115.
*Puerperal Creatinuria. N. J. Eastman and S. W. Lee.—p. 143.
Some Remarks on Changes of Eyeground in Toxemia in Pregnancy. A. Pillat.—p. 149.
*Escape of Lipiodol into Utero-Ovarian Venous System in Hysterosalpingography. A. I. H. Wong, C. Wu and M. H. Chien.—p. 162.
*Wassermann and Kahn Reactions of Human Milk. Dorothy Huie Wong and A. I. H. Wong.—p. 168.
Sarcoma of Uterus: Report of Five Cases. S. W. Lee.—p. 175.
Study of Manual Extraction of Placenta in China: Report of Twenty-Five Cases. A. I. H. Wong.—p. 184.
Pseudohermaphrodism: Report of Unusual Case. P. C. Tung.—p. 197.
Bacillus Welchii Infection of Uterus During Labor: Report of Seven Cases. E. M. Crooks.—p. 202.
Laceration of Vagina During Coitus: Report of Three Cases. Thelma K. P. Tsang.—p. 207.
Compound Presentation: Report of Four Cases. A. I. H. Wong.—p. 214.
Ovarian Cyst Complicated by Marked Ascites: Report of Case. Y. H. Hsu.—p. 219.
Cysts of Uterus. J. P. Maxwell.—p. 224.

Puerperal Creatinuria.—Eastman and Lee report that lactating puerperas excrete little urinary creatine during the first two or three days of the puerperium, but immediately thereafter a rapid increase in the creatine-creatinine ratio occurs so that on the sixth day it reaches levels which average about 0.6. Nonlactating puerperas, on the other hand, exhibit a very high creatine-creatinine ratio on the second day post partum, followed by a rapid decrease in the amount excreted, so that by the seventh or eighth day the urinary creatine in this group is usually reduced to a trace. Compound solution of iodine, in doses of 1 to 2.5 cc. daily, has no effect on the creatine excretion of the puerperium; the basic mechanism of puerperal creatinuria, therefore, differs from that seen in exophthalmic goiter, in which compound solution of iodine has been found to diminish the creatinuria. Puerperal creatinuria closely parallels mammary engorgement and seems to be related in some unknown way with the excessive distention of the mammary ducts with milk.

Escape of Iodized Oil into Utero-Ovarian Venous System in Hysterosalpingography.—Wong and his associates report four cases in which the injection of iodized poppy-seed oil 40 per cent into the uterus during hysterosalpingography was followed by appearance of the oil in the utero-ovarian system. It is fortunate that the amount of oil escaping during a hysterosalpingography is usually too small to be of any clinical significance. Nevertheless this oil is able to kill an animal when it is given intravenously in sufficiently large doses. The authors were able to kill rabbits weighing from 1.5 to 2 Kg. by introducing 1 cc. of the drug intravenously. The possibility of this danger should be borne in mind, and care taken to avoid it. The authors are therefore in favor of carrying on the intra-uterine injection of iodized oil between seven and ten days after the cessation of the menstrual period and under the fluoroscope to avoid such an accident. Using this

technic for the last three years, they have not encountered a single accident of this nature. They believe that injecting under sight is better than any arbitrary way of regulating the pressure, since the permeability of the endometrium varies greatly in different individuals. Practically speaking, this observation deserves serious consideration. If oil can make its way into the utero-ovarian venous system so easily during hysterosalpingography, it will be quite easy for air or any other gas used in Rubin's test to enter and lead to a disastrous result. In fact, two cases in which death followed insufflation of the fallopian tubes have been reported by Maench; other undesirable manifestations have been related by Aldridge and by Kern. The authors are beginning to doubt Rubin's statement "The method proposed by me should never result in mortality," since iodized poppy-seed oil 40 per cent escapes thus readily, as seen in their cases. For this reason a hysterosalpingogram used with the fluoroscope is to be preferred to Rubin's test.

Wassermann and Kahn Reactions of Human Milk.—In 140 nonsyphilitic cases, agreement of the blood and milk was found by the Wongs in 99.2 per cent of the Wassermann reactions and 94.8 per cent of the Kahn reactions. In eleven syphilitic cases from which the milk specimen was obtained by the tenth day post partum, agreement of the blood and milk existed in 50 per cent of the Wassermann reactions and 70 per cent of the Kahn reactions. On the basis of their observations, the authors conclude that the Wassermann and Kahn reactions of human milk are not sufficiently reliable to be used as an alternative to the blood Wessermann and Kahn tests.

Journal d'Urologie Médicale et Chirurgicale, Paris

33: 217-320 (March) 1932

*Prostatectomy by Suprapubic Route in Diseases of Prostate Other Than Hypertrophy and Cancer. G. Marion.—p. 217.
External Tegument and Endocrine Secretions. E. Retterer.—p. 222.
Extradural Segmental Anesthesia. G. Giordanengo.—p. 245.
Fifty Cases of Epidural Anesthesia with Nupercaine. L. Phelip.—p. 256.

Prostatectomy.—Marion discusses again the suprapubic route of prostatectomy in chronic prostatitis, which he recommended several years ago. He considers it preferable to the subpubic route in many cases as it avoids the danger of the interminable perineal fistulas that so often follow the latter method of operation. He thinks the operation indicated in the following types of chronic prostatitis: (1) lightly suppurating cases of slight importance from the anatomic point of view but resistant to all medical treatment, (2) cases presenting voluminous fistulized abscesses in the urethra, (3) cases accompanied by perineal fistula with periprostatitis, (4) cases presenting calculi, and (5) cases accompanied by hypertrophy of the prostate. The author thinks it advisable to confirm the indication for operation by urethrography. The technic of intervention in these cases, which differs a little according to the case, is described. In a number of cases the author has practiced a preoperative vaccination and he has never had any bad results in these cases, whereas in one of the cases in which he did not practice preoperative vaccination a general infection ensued. The author does not consider these interventions more dangerous than prostatectomy for hypertrophy and has experienced only two deaths among seventy-four interventions.

Pratique Médicale Française, Paris

13: 259-304 (April) 1932

Local Irritation, Local Vagotonia, Local Eosinophilia in Asthma. E. Bernard.—p. 259.
*Indications for Various Technics in Roentgenologic Examination of Lungs. Dioclès and R. Azoulay.—p. 269.
Bronchoscopy in Diagnosis of Bronchopulmonary Cancers. A. Soulas. —p. 280.
*Pleural and Pulmonary Primary Forms of Hodgkin's Disease. J. Bernard.—p. 286.

Various Technics in Roentgenologic Examination of Lungs.—Dioclès and Azoulay discuss the indications for the use of the various technics of roentgenologic examination of the lungs and the special merits of each method. Roentgenoscopy is useful in the location of large lesions and indispensable for execution of artificial pneumothorax, but it is deficient for diagnosis of many cases, especially miliary lesions. Whenever roentgenoscopy does not show anything but the clinical examination or anamnesis indicates something, a roentgenogram is indispensable. Roentgenography at a great distance usually suffices, but it should be supplemented more frequently than customary by profile and oblique negatives. The use of an antidiffuser is useful in cases of obesity, fibrothorax and large pleurogenous symphyses. When interpretation of simple roentgenograms is not possible, it is necessary to employ stereoroentgenography. This technic is useful in the course of artificial pneumothorax as it shows the shape of the stump and the location of adhesions and the presence of cavities in them, which may facilitate the operation of Jacobéus. It often permits location of foreign bodies or intrathoracic collections, which is of practical value from the point of view of surgical drainage at the most dependent point. It is indispensable in the study of the posterior mediastinum, whether one uses profile position, right anterior oblique position or left posterior oblique position. In these cases one can facilitate the reading of the negative by filling the esophagus with barium paste. It is equally indispensable for the diagnosis and location of cysts and tumors of the lungs and pleura; of hernia or eventration of the diaphragm from the point of view of location of the hernial orifice. Bronchial dilatation, simple or masked by pleurogenic symphysis of the mediastinum or of the large cavity, may sometimes be diagnosed by stereoroentgenography alone; when preceded by injection of iodized oil, positive diagnosis is possible. In cases of pleural or pulmonary suppuration, injection of iodized oil into the bronchi gives a particular negative aspect which is of great value. The direct injection of suppurating cavities, whether by puncture or by a fistulous orifice, is highly important. Despite the progress of technic it is impossible to solve all problems with roentgen rays and to give a precise diagnosis in all cases.

Pleural and Pulmonary Primary Forms of Hodgkin's Disease.—Bernard presents a comprehensive study of the symptoms of those pleural and pulmonary disturbances which exist as primary forms of Hodgkin's disease. Pleurisy as a primary form of Hodgkin's disease is relatively frequent, whereas a primary pulmonary localization of the disease is rare. The clinical aspects of primary pleural forms of lymphogranulomatosis are diverse. A rather frequent form is the one that has practically all the traits of serofibrinous pleurisy. In the presence of a serofibrinous pleurisy which cannot be otherwise accounted for, one should immediately think of Hodgkin's disease. The intensity of the dyspnea is the major element of the clinical picture. The unlimited production of fluid and its variegated cytologic picture are the essential characteristics of granulomatous pleurisy, but they are far from being constant. Whether it evolves slowly or rapidly, as a solitary manifestation or followed by other symptoms of the granulomatous complex, the pleurisy sooner or later becomes grave and terminates fatally. Any splenopleural or adenopleural syndrome should make the clinician think of Hodgkin's disease, especially in case of an adenopathy exhibiting the irregularity, indolence and total absence of softening and of tendency to suppuration, which is characteristic of the disease. The evolution of primary pulmonary forms of malignant granuloma manifests itself in symptoms that are rather common, so that for a long period there is usually nothing which permits their true nature to be suspected. Usually they assume the form of a chronic or subacute pneumopathy. The objective and subjective symptoms and the roentgenologic manifestations are discussed by the author, who finds none of them characteristic. In contrast to granulomatous pleurisy, the pneumopathies are seldom grave in themselves; but sooner or later the disease becomes generalized and the patient dies of cachexia or a complication. Hemoptysic, pseudomiliary, bronchopneumonic and mediastinopulmonary forms are mentioned; also the pleuropulmonary form. The diagnosis of pleurisies and pneumopathies that exist as primary forms of Hodgkin's disease is difficult. The former is most often confused with pleural tuberculosis and the latter, if of the silent type, is often mistaken for tuberculosis; or, if of the more characteristic type, it is mistaken for cancer of the lung. Roentgenologic visualization of a tracheobronchial adenopathy speaks against tuberculosis in adults. Histologic examination of a peripheral lymph node should be practiced when possible, as it aids in diagnosis. In its absence, diagnosis is often impossible.

Revue Sud-Am. de Méd. et de Chir., Paris

3: 193-288 (March) 1932

*Azotemia in Tetanus. R. F. Vaccarezza, J. Peroncini and A. J. Vaccarezza.—p. 193.

*Congo Red as Diagnostic Measure in Amyloidosis. D. Vivoli.—p. 208.

Scrotal Elephantiasis. Z. do Amaral.—p. 223.

Influenzal Meningitis and Syphilis. C. M. Rezende and A. A. Filho. —p. 228.

Practice of Surgical Interventions Under Local Anesthesia. H. V. de Paula.—p. 238.

Azotemia in Tetanus.—Vaccarezza and his co-workers observed an increase of the blood urea in twenty out of twenty-four patients with tetanus. In some cases the hyperazotemia reached high figures and was accompanied by lethal uremic manifestations. The determination of blood urea has a considerable prognostic significance. One should not predict a cure during the first two weeks of the illness without having determined the blood urea. The treatment of tetanus should always envisage the existing danger of uremia, so that it may be prevented and combated as far as possible. The pathogenesis of uremia in tetanus is complex. There is a functional or anatomic retention and above all an excessive production of urea due to an increase in tissue proteolysis. Tetanus is dangerous not only because of its paroxysms and contractions and the possibility of bronchopulmonary complications but also because of the disturbance of the azotemic equilibrium and the sugar regulation. Its toxic action is not limited to the nervous centers but extends directly or indirectly to other systems and to the organs influencing metabolism.

Congo Red as Diagnostic Measure in Amyloidosis.—Vivoli reports and discusses investigation of five cases of amyloidosis to support his statement that congo red is a valuable diagnostic measure in amyloidosis. His investigations show that (1) it is possible to obtain a vital staining of amyloid with congo red, without harm to the patient; (2) a retention of from 40 to 100 per cent of the dye one hour after injection speaks in favor of the probability of amyloidosis. Normally there is a retention of from 11 to 29 per cent of the coloring matter; the retention takes place chiefly in the liver and the kidneys. Its elimination commences about thirty minutes after injection and lasts from eight to ten days. In certain pathologic conditions such as syphilitic nephrosis and the beginning stage of glomerular amyloidosis the kidneys eliminate more rapidly and in greater amounts, so that the dye is quickly eliminated by the kidneys without being fixed. In advanced amyloidosis the dye disappears from the blood serum but cannot be found in the urine. In a case of this type in which slight traces of dye were found in the serum and the urine after the fourth test, the author attributes this to saturation of the amyloid substance by the congo red and elimination of the excess by the kidneys. In one case, necropsy three months after the last test revealed such a large quantity of fixed dye that it gave the impression that the injection had been performed several hours before death; no dye had appeared in the urine in the interval. From these considerations, the author thinks that the vital coloration of the amyloid tissue may last as long as the pathologic process itself.

Schweizerische medizinische Wochenschrift, Basel

62: 369-392 (April 16) 1932

*Studies on Phosphate and Calcium Under Influence of Viosterol. W. Heubner.—p. 369.

Destructive Action of Iodine on Acid Resistance of Tubercle Bacillus. S. Marbais.—p. 377.

Pernicious Anemia and Tetany. M. Geraldy.—p. 378.

Colloidal Mercury Sulphide. Gennerich.—p. 378.

Phosphate and Calcium Under Influence of Viosterol.—Heubner observed that large doses of viosterol (for each kilogram of body weight of the animal from 5,000 to 50,000 times the antirachitic rat unit) effect in rabbits and cats after a temporary slight reduction a considerable increase of the inorganic phosphate content of the blood. This increase is best noticeable two days after a single oral administration. The elimination of calcium in rabbits and dogs is not noticeably influenced by administration of large doses of viosterol. However, after a certain time there is a more active participation in the elimination on the part of the kidney, for at times the freshly voided urine contains insoluble salts in suspension. The organs of rabbits that have been treated with large doses of viosterol do not show noticeable changes in the calcium content. Only in those animals in which anatomic examination revealed processes of calcification in the organs were deviations from the normal calcium content noticeable.

Archivio Italiano di Chirurgia, Bologna

31: 1-115 (Jan.) 1932

*Chronic Stenosis of Duodenum Due to Perivisceritis. M. Agrifoglio. —p. 1.

Large Tumor of Carotid Gland: Removal After Resection of the Jugulocarotid Bundle of Vessels and of the Vagus. C. Trinchera.—p. 52.

*Dermatitis and Precancerous Lesions from Tar in Man. G. Bettazzi. —p. 69.

Chronic Stenosis of Duodenum Due to Perivisceritis.—Agrifoglio states that essential periduodenitis originates through the portal system, being due to transitory inflammation of the adjacent organs (gallbladder, stomach, pancreas) or to the remote viscera (appendix) through the possible intermediary of a lymphangitis or to permanent peritoneal lesions on an old and transitory infection of the gallbladder, pancreas and appendix. Some believe that the perivisceral adhesions are occasioned by general infections, e. g., tuberculosis and syphilis, but the etiology of perivisceritis still remains uncertain. Factors tending to compress and displace the duodenum are (1) insufficient development of the base of the thorax, (2) lumbar lordosis, (3) relaxation of the abdominal wall, and (4) exaggerated mobility of the cecum or extreme length of the mesentery and mesocolon. The facility with which small bands of adhesions cause stenosis is explained by the position of the duodenum, which predisposes it to compression between the spine and the root of the mesentery. Clinical and roentgenologic symptoms differentiate compression due to the superior mesenteric artery from stenosis due to essential perivisceritis: clinically there will be general disturbances and pains, nausea and vomiting occurring in the true crises. Roentgenologically, compression by the superior mesenteric artery in the erect position shows a distinct arrest of the barium on the median line or a little to the right of it, at the point where the mesenteric pedicle passes in front of the duodenum with marked distention of the third portion and the lower angle of the duodenum. Stenosis of the duodenum due to perivisceritis following gastroduodenal ulcer is best determined by roentgen examination, which will show signs caused by the rigidity of the intestinal wall, wherever adherent, and atony of the segment concerned. Pain during palpation is an important symptom, especially when produced during the attempt to separate the viscera, and is all the more confirmative if it accompanies difficult or impossible dissociation of the suspected viscera. Medical treatment advised for minor obstructions of the duodenum consists in (1) sustaining the abdominal wall by means of a corset, (2) massaging and exercising the abdominal muscles, (3) dorsal decubitus on an inclined plane, holding the head low, and (4) resting after eating. Two generally used operations for periduodenitis are (1) liberation of the duodenum from adhesions, which permit it to reassume its normal form and size, and (2) operation to determine a good evacuation of the gastroduodenal segment situated above the obstacle. In periduodenitis due to ulcer, transmesocolic gastro-enterostomy with section of the adhesions is recommended.

Dermatitis and Precancerous Lesions from Tar in Man.—Bettazzi demonstrates histologically that the action of tar on human skin may cause either atrophy or epidermal hyperplasia. Since tar may cause atrophy of the papilla and of the hair until it disappears, it is natural that tar should act in the same way on the skin. The process of hyperplasia which generally accompanies alterations of the skin is explained by the irritative and proliferative action of the tar on the epidermal epithelium. The principal alteration of the skin, namely, lymphocyte and plasma cell infiltration, can be attributed to a true action of the tar. The author found in the skin of patients the presence of tar granules between the corneal layers in the zone of hyperkeratosis, in the dilated infundibula of the atrophied hair follicles, between the connective fibers of the superficial skin. He found no dermo-epidermal lesions of the exudative type with the presence of polymorphonuclear leukocytes, nor regressive processes habitually occurring in acute infections (pyodermatitis, acne suppurata, folliculitis). Concomitant alterations of the dermal connective tissue consist

in the swelling of connective tissue bundles, disappearance of the characteristic fibrillations and alterations of staining affinity. The alterations are especially observed in zones of prominent proliferative activity of the epidermis, which consists in multiple deep epithelial digitations fusing into the derma, in epithelial layers or nests tending to form corneal pearls. The dermal lesions described prepare a basis particularly adapted to the invasion of the epithelial proliferation and it is also probable that in a ground so prepared the epithelial vegetation can easily acquire the morphologic alterations, the atypical characteristics true of cancer. The oncogenous action of tar in man is explained by a chronic irritation of the tissues by which the workmen in continual contact with the tar acquire microscopic and histologic lesions of the skin (chronic dermatitis which can turn to cancer). Of the number of workmen exposed to the action of the tar and its derivatives, only a few contract dermatitis and fewer still cancer. The patients can carry for a long time with impunity the epithelial neoplasms due to tar, demonstrating a relative biologic mildness. During this time they can be cured with opportune surgical aid, but local recurrences and malignant transformations of other cutaneous lesions are possible. The neoplasms are neoformations which, although having the morphologic characteristics of cancer, are differentiated from them clinically by an extremely slow course, by the lack of metastases, and by the complete absence of phenomena reacting on the general economy of the organism; however, in the course of time they can acquire all the biologic characteristics leading to death through metastases and cachexia.

Riforma Medica, Naples

48: 231-268 (Feb. 13) 1932

Evolution and Form of Hydronephrotic Sacs. G. Lucarelli.—p. 233.
Enuresis and Sexual Disturbances Due to Marked Congenital Malformation of Lumbosacral Vertebral Column. F. di Bella.—p. 242.
*Rare Seat of Location of Echinococcus Cysts. A. Cioffi.—p. 254.

Echinococcus Cysts.—Cioffi explains the presence of echinococcus cysts in the bladder by embryos which, after having overcome the resistance of the porta and the pulmonary capillaries, constituting two filters of the portal and general circulation in the capillary reticulum of both the liver and the lungs, remain in the circulation and are arrested at some point of the organism, especially where the circulation is terminal. The parasites in the liver and lungs produce germinating cysts, while those that pass through the barrier of the pulmonary capillaries are smaller and produce acephalocysts. Contrary to what happens in the case of blood vessels which are gradually obliterated by endarteritis and endophlebitis, mucous canals included in the cystic walls do not tend to obliterate themselves. Despite their flattening, they remain permeable until compressed by the parasite, because their epithelium prevents fusing of their walls. This explains the elimination of hydatid detritus by the large excretory tubes (bronchi, bile duct and ureter).

Archiv für Kinderheilkunde, Stuttgart

96: 65-128 (April 8) 1932

*Esophageal Spasm in Children. Maria Sudhues.—p. 65.
Frequency of Tuberculous Infection Among School Children of Pécs (Hungary). L. von Dobszay and G. Petrányi.—p. 88.
*Favorable Outcome of General and Pulmonary Tuberculosis with High Fever During Childhood. G. Paschlau.—p. 94.
Pseudotetanus Escherich an Encephalitis? Maria Niermann.—p. 108.

Esophageal Spasm in Children.—Sudhues reviews the literature on esophageal spasm in children and then reports four new cases, in two of which there was a constitutional inferiority. She is convinced that careful examination, particularly with roentgen rays, will reveal that a spasm of the esophagus is frequently the cause of vomiting. She differentiates between primary and secondary spasms. The secondary spasms may occur in normal children following an injury or an inflammation of the esophagus. However, the primary spasm is probably due to a congenital inferiority of the sympathetic nervous system; namely, to a disturbance in the vagus or in the intramuscular plexus of the esophagus. The primary spasm is in nearly all cases in the lower third of the esophagus. A satisfactory explanation for this localization has not been found as yet. It has also been observed that the primary spasms are more frequent in boys than in girls. A group of cardiospasms with dilatation of the esophagus that occurs during the first year of life is explained as resulting from the abolition of the opening reflex of the cardia, which in turn is due to an injury of the vagus. This theory of pathogenesis is based on studies by Ylppö, Tamiya and Rieder.

Favorable Outcome of General and Pulmonary Tuberculosis with High Fever During Childhood.—Paschlau points out that among the patients in children's hospitals one occasionally sees children with new severe tuberculosis, with a poor general condition and with high fever, for whom the prognosis is apparently unfavorable. With surprise one notices in a number of these children that the high fever, which has persisted for several months, gradually subsides and that severe disseminated processes and focal or infiltrative pulmonary processes gradually regress and finally end in recovery. The author reports the case of a girl, aged 2½, in whom there was high fever and a miliary tuberculous dissemination with some typhoid-like symptoms. A second patient was a girl, aged 2, who had a subacute miliary tuberculosis. During the beginning stage the pulmonary symptoms predominated, and later numerous metastases developed in the bone system. He reports the cure of a nursling who had chronic torpid miliary tuberculosis with intercurrent epituberculosis of the lung. The fourth patient was a girl, aged 11, with pulmonary infiltration and high fever that lasted four months. The girl recovered. In regard to the treatment of hematogenic miliary tuberculosis, there is little to be done. He warns against irritation therapy in any form, ray therapy, and the injection of tuberculin or of nonspecific protein.

Archiv für klinische Chirurgie, Berlin

169: 597-796 (April 8) 1932

*Causal Significance of Gastric Juice and of Condition of Hunger in Gastritis Following Simulated Feeding. H. Puhl.—p. 597.
Clinical Aspects and Therapy of Perforated Ulcers of Stomach and of Duodenum. O. Hoche and G. Marangos.—p. 626.
Free Transplantation of Omentum. P. Rosenstein.—p. 639.
Three Decades of Plastic Use of Paraffin. H. Eckstein.—p. 646.
*Is It Permissible to Perform a Surgical Intervention During Menstrual Period? A. Popova.—p. 675.
Xanthomatous Giant Cell Granuloma of Sheath of Tendon. W. Sprenger.—p. 683.
Desmoids and Sarcoma of Abdominal Wall. Z. W. Mankin.—p. 688.
*Percutaneous Nailing of Dislocated Fragment of Lower End of Tibia. F. Felsenreich.—p. 712.
Wound Healing Following Electrosurgery. G. von Magyary.—p. 737.
Indications for and Technic of Operative Closure of Fistula of Small Intestine. G. Tschmarke.—p. 754.
Exophthalmic Goiter with Low Basal Metabolism. A. Troell.—p. 774.
Elephantiasis of Plastic Skin Graft on Thumb. F. W. Wichmann.—p. 783.
Furuncle of Face and Thrombosis of Cavernous Sinus. O. Schumacher.—p. 789.

Causal Significance of Gastric Juice and of Hunger in Gastritis.—Puhl reports his observations during simulated feeding of esophagostomized dogs. He employed the technic of Pavlov and Silbermann, who produced gastric and duodenal ulcers by simulated feeding. The author is convinced that the causal factor of the degenerative processes resulting from the experiment is the hypersecretion of the gastric juice. He proved this by withdrawing the gastric juice produced during simulated feeding and then introducing it into a dog that had not been esophagostomized but lived under normal conditions. He observed that in this dog there were signs of degeneration and even extensive erosions of the mucous membrane of the fundus of the stomach, although they were of a somewhat lesser degree than in the esophagostomized dogs. He thinks that this experiment proves conclusively that a healthy gastric mucous membrane can be impaired by a hyperacidic gastric juice. That the condition of starvation is likewise a causal factor of the degenerative processes was proved by starvation and thirst tests on dogs that had not been esophagostomized. In these dogs there was a high degree of gastric acidity even when the dogs no longer showed a desire for the meat that was shown to them. The tissue changes in the gastroduodenal mucous membrane during starvation resemble those in the esophagostomized dogs but are of a somewhat lesser degree.

Surgical Operations During Menstrual Period.—In order to detect the influence exerted by surgical trauma during menstruation, Popova made careful observations on women in whom an operation was urgent and could not be postponed until after the menstruation. The favorable course of the postoperative wound healing observed in these cases induced him to operate on women during the menstrual period also when

the intervention could have been postponed. On the basis of observations in fifty cases he reaches the following conclusions: In menstruating women there is a more intense stimulation of the hematopoietic apparatus than in women who are operated on during the intermenstrual period. This increased stimulation becomes manifest in a more pronounced leukocytosis and in a greater deviation to the left in the hemogram. These manifestations are especially noticeable in cases in which general anesthesia is employed. The coagulability of the blood increases under the influence of the surgical intervention in menstruating women in the same degree as in nonmenstruating women. The danger of a hemorrhage during the intervention is of no great significance, in spite of the fact that thrombopenia develops in some cases. Provided the intervention is not of an especially serious nature, the menstruation does not cause complications during the postoperative course. In view of the biologic peculiarities of the menstrual period it is advisable to avoid serious, long lasting surgical intervention, unless an immediate intervention is absolutely necessary. However, less complicated and minor interventions are not contraindicated during menstruation.

Percutaneous Nailing of Dislocated Fragment of Lower End of Tibia.—According to Felsenreich, luxation fractures in the upper portion of the ankle joint with avulsion of longitudinal portions of the tibia have a tendency to reluxation, in that the fragment becomes dislocated again, a condition that is designated as "wandering talus." Treatment with a plaster-of-paris cast, following manual reposition, gives good results in some cases; however, in many instances it is followed by secondary dislocation and leads to permanent difficulties. The simple extension treatment, which accomplishes reposition by slow traction, avoids serious permanent impairment but leads to step formation in the joint by causing a slight displacement of the talus and posttraumatic arthritis. Böhler's procedure of reposition by screw traction in the plaster-of-paris cast and subsequent permanent extension secures ideal primary results, but in severe cases the fragments cannot be permanently retained in the correct position. For this reason the author combined the latter method with the percutaneous nailing of the detached fragment with the aid of a wire, which is tightly stretched and fastened on the plaster-of-paris cast. This procedure prevents the secondary displacement of the fragment, and the final results meet all expectations by reestablishing normal anatomic as well as functional conditions.

Deutsche medizinische Wochenschrift, Leipzig

58: 605-644 (April 15) 1932

*"Epiphrenal Syndrome": Its Relation to Angina Pectoris and to Cardiospasm. G. von Bergmann.—p. 605.
Hiatus Hernias from Point of View of Roentgenologist. W. Knothe.—p. 609.
Bacillus and Clinical Aspect of Tuberculosis. W. His.—p. 612.
Position of Banti's Disease in Modern Clinical Medicine. W. H. Veil.—p. 615.
Relation of Method and Means to Interruption of Pregnancy. K. Abel.—p. 620.
Severe Polyneuritis Following Use of Abortifacient. H. Jagdhold.—p. 623.

Relation of "Epiphrenal Syndrome" to Cardiospasm.—Von Bergmann challenges the old theory of cardiospasm. He questions both that it is a spasm and that it is a disturbance of the cardia. In ten of seventeen cases of so-called cardiospasm, he observed that when in roentgenoscopy a maximal filling of the esophagus was avoided a winding structure was noted above the diaphragmatic hiatus, and he thinks that this is a portion of the stomach, for if in such cases the cardia is searched for, it is far above the diaphragm. The author points out that both vagi go through the esophageal hiatus of the diaphragm, and that pressure or pulling at this site may cause vagal and also sympathetic reflex phenomena, for the two vagi contain not only centrifugal vagal fibers but also centripetal fibers and sympathetic fibers. The author cites experiments in which a balloon was introduced into the esophagus where it passes through the diaphragmatic hiatus. It could be observed that the coronary circulation was considerably inhibited as the result of the pressure on the vagi. If angina pectoris is caused by a disturbance in the coronary circulation, as is assumed by some, this experiment would explain the angina pectoris of the gastrocardial syndrome. Other conditions that the author thinks are due to pressure in the diaphragmatic hiatus are gastric vertigo, many cases of periodic hiccup, also aerophagy and nervous eructation. The author considers the cases in which he observed a portion of the stomach above the diaphragm not as true diaphragmatic hernias but rather as transluxations caused by a contraction of the longitudinal muscles of the esophagus. This theory of pathogenesis is corroborated by the frequency of the phenomenon as secondary disease following peritoneal vomiting, ileus, gallstone colic and postoperative conditions. However, it is not definitely known as yet how often transluxation of the stomach actually exists and the author prefers the term "epiphrenal syndrome," which is more general and which may have various forms of manifestation. In regard to the treatment, he states that those measures are suitable which are resorted to in cases of the gastrocardial syndrome. He also thinks that special diaphragmatic gymnastics might prove helpful. Surgical intervention is necessary only in the severest cases.

Deutsche Zeitschrift für Chirurgie, Berlin

235: 537-680 (April 7) 1932

Development of Electric Fields in Muscular Activity. H. Hartmann and A. von Danckelman.—p. 537.
Determination of Fat Content of Blood. H. L. Popper and R. Scholl.—p. 565.
Combination of "Avertin" Basic Anesthesia with Ether, Nitrous Oxide and Ethylene. H. Widenhorn.—p. 573.
Disturbances of Carbohydrate and Acid-Base Economy and Gas Exchange in "Avertin" Anesthesia and Their Modification by Oxygen and Carbon Dioxide Reinhalation. H. Fuss and E. Derra.—p. 587.
Lumbar Anesthesia. W. Rabinowitsch.—p. 599.
Roentgenography of Vascular System. T. Wohlleben.—p. 607.
*Relation of Osteitis Fibrosa Generalisata (von Recklinghausen) to Parathyroids. F. W. Wichmann.—p. 619.
*Diagnosis of Acute Appendicitis: Especial Consideration of Rovsing's Sign. C. Wallerström.—p. 635.
Arch-Shaped Incision and Inguinal Hernia Operation. L. Drüner.—p. 652.
Inguinal Hernia Operation: Results of Reexamination in Four Hundred and Sixteen Cases. H. Ledermann.—p. 658.
Hemorrhagic Diathesis Without Icterus in Complete External Biliary Fistula. E. Heller.—p. 667.
Extirpation of Spleen in Myelogenous Leukemia. J. Kuhle.—p. 674.

Relation of Osteitis Fibrosa Generalisata and Parathyroids.—Wichmann describes a case of osteitis fibrosa generalisata (von Recklinghausen) in a woman, aged 45. Following removal of an intrathyroidally located adenoma of the parathyroid from the left side of the thyroid, which was slightly enlarged, there was a progressive improvement in the general condition, and the greatly changed calcium metabolism returned to normal. This case again brings out the close relations of osteitis fibrosa generalisata and the parathyroids and shows that surgical removal of a pathologically changed parathyroid, even if it is intrathyroidal and only slightly enlarged, can achieve a successful result. This case also shows the importance of a thorough examination of the thyroid to locate the parathyroids when these appear to be absent. A wedge-shaped excision of any suspicious portion of the gland, especially on the posterior wall, is advised.

Rovsing's Sign in Diagnosis of Acute Appendicitis.—Wallerström discusses the Rovsing sign in acute appendicitis and calls attention to its diagnostic value. Rovsing's sign consists in a sensation of pain on the right side of the abdomen at the site of the appendix evoked by light pressure in the left iliac fossa. The author procured the best results by slowly pressing the soft parts over the colon downward with the fingertips and then quickly releasing them. The sensation of pain at the site of the appendix occurs at the instant of release. Perman's method of light downward pressure in the left iliac fossa in the direction of the right side of the abdomen was also used with better result than the original pressure and massage method of Rovsing. Investigations were made in 211 operative cases of acute appendicitis. Rovsing's sign was exhibited by 70 per cent of the cases. Rovsing's sign was positive in a higher percentage of cases in gangrenous appendicitis than in simple appendicitis. Of the other appendicitis symtoms, only pain on the right side of the abdomen and direct local pressure sensitivity in the right iliac fossa compare with Rovsing's sign in frequency. Rovsing's sign is frequently positive when other appendicitis symptoms are negative. It is probably evoked by a pressure transmitted from the left to the right side of the abdominal cavity and is probably comparable to direct pressure sensitivity although the mode of

producing the pressure is somewhat different. The occurrence of Rovsing's sign is probably favored by a medial or lateral position of the appendix. The sign is not specific for appendicitis, as it may be found in other localized disturbances of the peritoneum. It is a means of differential diagnosis between extraperitoneal and intraperitoneal disease conditions. Negative result of Rovsing's sign does not exclude appendicitis, but a positive Rovsing's sign is a valuable aid to diagnosis and indicates that the pathologic changes are in the appendix. There are cases in which the positive Rovsing sign is the only unequivocal symptom of appendicitis.

Monatsschrift für Kinderheilkunde, Berlin

52: 261-468 (March 23) 1932. Partial Index

*Vaccine Therapy of Whooping Cough. E. G. Westendorff.—p. 261.
*Idem. H. Gentzsch.—p. 273.
Treatment of Whooping Cough. E. A. Voss.—p. 287.
Percentage of Children Having Had Scarlet Fever: Epidemiologic Significance of That Percentage. G. Fedders.—p. 294.
Physical and Mental Action Capacity of Girls in Elementary Grades in Relation to Their Constitution and Health. Else Liefmann.—p. 305.
*Etiology of Necrosis of Subcutaneous Adipose Tissues of the New-Born. E. Unshelm.—p. 321.

Vaccine Therapy of Whooping Cough.—Numerous reports of experiments with nonspecific protein therapy in whooping cough induced Westendorff to try this treatment in fifteen cases of the disease. In intervals of from two to three days he injected increasing doses of a polyvalent gonococcus vaccine, but there was no noticeable change in the course of the disease. Several months later the author treated twenty whooping cough patients with a specific whooping cough vaccine. Only in two of these children was the whooping cough favorably influenced; in all others the treatment was ineffective. In a case of tuberculosis of the bronchial lymph nodes, in which whooping cough vaccine was given to prevent whooping cough, it developed nevertheless two weeks after the first injection. However, in view of other favorable reports in the literature, and considering the two cases of his own observation, the author does not feel justified to consider the vaccine therapy of whooping cough as entirely valueless. He considers as a distinct disadvantage that in most cases whooping cough is not recognized until it has fully developed but he hopes that, eventually, careful consideration of the anamnesis, examination of the hemogram (increased number of leukocytes) and perhaps also bacteriologic examination may permit an earlier diagnosis. He hopes that, if the vaccine therapy is begun in the earliest stages, it may prove more effective.

Vaccine Therapy of Whooping Cough.—Gentzsch employed both a mixed whooping cough vaccine and a pure vaccine. The mixed vaccine contained mainly Bordet-Gengou bacilli but also pneumococci, streptococci, staphylococci, influenza bacilli and Micrococcus catarrhalis. The pure vaccine contained only Bordet-Gengou bacilli. Both vaccines were given in increasing quantities. Among forty-eight children who were treated with these vaccines, the author observed twenty-six in whom the duration of the disease was shortened. The course was the shorter, the earlier vaccination was begun. In children with complications the shortening was less, and in nurslings the vaccine had no effect. Early treatment was successful in a few cases. Secondary effects, such as local reactions, increase in temperature, increased frequency and intensity of the attacks of coughing during vaccination but also a favorable influence on the state of nutrition were observed in several of the cases. When larger doses of vaccine were given, the actions were the same as those observed with the usual doses. Three of the children who underwent the vaccine therapy died. However, two of these fatalities occurred six months after the vaccination, and these children had miliary tuberculosis; the third fatality resulted from a meningitis that developed on the day following the second injection of vaccine.

Necrosis of Subcutaneous Adipose Tissues of the New-Born.—Unshelm states that the majority of those who have studied necrosis of the subcutaneous adipose tissues in the new-born think that it is caused by a trauma, particularly by a birth trauma, but there are also some who dispute this etiology. The author reviews a case history from the literature, in which the necrosis of the subcutaneous tissue of the new-born was identical with the fat necrosis in adults, which is often an accompanying symptom of a pancreatic disorder. However, in adults there are also fat necroses that are not of pancreatic origin, and these are often ascribed to traumatic causes. The etiology of the necrosis of the subcutaneous adipose tissue in the new-born is still not definitely decided, but the following are the factors that have been cited to prove a traumatic origin: 1. In the majority of the cases that have been described in detail the birth had been difficult, the infants had been more or less asphyctic, and besides this other birth traumas were present. 2. The mothers were usually old, corpulent primiparas. 3. The infants were generally large and heavy and had a well developed subcutaneous layer of fat. 4. True traumatic changes, such as the so-called forceps infiltrates, were found similar to the necrosis of the subcutaneous adipose tissues. 5. The children were frequently exposed to intensive cooling, and by artificial cooling it was possible to produce similar changes. However, the following factors have been cited against the traumatic origin: 1. Incongruity between the trauma to be expected and the actual trauma. 2. The occurrence in apparently easy spontaneous confinements. 3. The symmetrical localization. 4. The missing histologic proof that the forceps infiltrates and the indurations resulting from cooling are identical with the necrosis of the adipose tissues. Before discussing the pro and con of the traumatic etiology, the author describes five cases of his own observation. In spite of the fact that the last described case has several characteristics that speak against a traumatic origin, the author considers such an etiology nevertheless possible. He thinks that the impaired circulation as a result of detachment of the placenta may have caused the necrosis in this case, and in general he inclines to the theory of a traumatic etiology; but he considers a correction of the opinions about the harmlessness of the birth process of greater importance than a theory on the etiology of the necrosis of the subcutaneous adipose tissue in the new-born.

Zentralblatt für Chirurgie, Leipzig

59: 833-928 (April 2) 1932

*Pharmacologic and Bacteriologic Tests of Iodoform Gauze. C. Franz.—p. 834.
Removal of Blood and Lymph in Conditions of Stasis. R. Klapp.—p. 840.
Technic of Esophagogastrostomy. E. K. Frey.—p. 845.
*Successful Replacement of Knee Joint in Congenital Defect and Pseudo-Arthrosis of Femur by Turned Ankle Joint. R. Demel and E. Gold.—p. 848.
Intravenous and Transvesical Pyelography. H. Boeminghaus.—p. 852.
*Spontaneous Separation of Entire Omentum with Secondary Partial Torsion Without Noticeable Clinical Manifestation. P. Esau.—p. 863.
Surgical Pathology of Multiple Neurinomas. H. Klose and J. Schneider.—p. 868.
Traction Bandage for Wrist Joint and Lower Arm. W. von Gaza.—p. 873.
Choice Between Sacral and Abdominosacral Operations in Carcinoma of Rectum. O. Goetze.—p. 878.
Two-Stage Method in Surgical Treatment of Carcinoma of Rectum. A. W. Fischer.—p. 887.
Experiences with Cholangiography. F. Sturm.—p. 891.
Roentgen Diagnosis and Therapy of Hypertrophic Pyloric Stenosis Following Chronic Gastritis. R. Wanke.—p. 896.
Covering of Traumatically Produced Substance Defects of Scalp. K. Flick and E. Traum.—p. 908.
Thrombosis and Pulmonary Embolism Following Intravenous Continuous Drop Infusion. L. Strauss.—p. 909.

Pharmacologic and Bacteriologic Tests of Iodoform Gauze.—In summing up the results of his pharmacologic and bacteriologic tests, Franz states that the iodoform content of the gauze in many instances is not what it is declared to be. The discrepancy is frequently considerable in gauze that has been stored for some time, as well as in that which has been produced more recently. The wrapping of iodoform gauze is significant for its content in iodoform as well as for the sterility. Wrapping in wood fiber paper that is free from sulphide and in thick, black parchment paper appears most suitable, but the author considers a third covering with cellophane advisable. The question whether and how long pathogenic organisms can live in iodoform gauze has as yet not been definitely decided, but it is probable that the bactericidal power increases with the iodoform content. However, in spite of the greatest care in the preparation of iodoform gauze, it cannot be entirely sterile for the finished product cannot be sterilized by steam. Whether the iodoform gauze that appeared to be sterile was actually sterile must be questioned, since free iodine may have inhibited the growth of the bacteria. The author recommends that efforts

should be made to replace iodoform gauze by a gauze that, following impregnation with a disinfectant, can be sterilized. He suggests several disinfectants that might be used, but it is as yet not proved whether these disinfectants have the same hemostatic and deodorizing effects as iodoform.

Successful Replacement of Knee Joint by Ankle Joint.—In the case reported by Demel and Gold, the right leg of a person, aged 22, had been atrophied since birth. The atrophy involved mainly the femur. The prosthesis that the patient wore was unsatisfactory in that it did not permit bending in the region of the normal knee joint. To overcome this difficulty the authors resorted to an operation that had first been done by Borggreve in 1929, namely, replacement of the knee joint by the ankle joint, after the latter had been turned round. Thus the ankle joint acted in the direction of the knee joint and permitted the wearing of a prosthesis that was movable in the knee joint. The operation was done in two stages and the results were entirely satisfactory.

Spontaneous Separation of Entire Omentum.—Esau describes a disorder that so far has not been reported; namely, detachment of the omentum and torsion of a narrow strip. With the exception of a slight irritation of the peritoneum, which became manifest in the later stages and which was interpreted as appendicitis, there were no clinical manifestations. The patient was a lumber worker, aged 47, who was brought to the hospital with the signs of a not entirely typical appendicitis and who reported that about two months previous he had had a similar attack, which, however, had disappeared again following three days of rest in bed. Since during the second attack there were no severe symptoms that necessitated an immediate operation, an expectant attitude was assumed and the symptoms disappeared again. However, a surgical intervention was recommended to the patient, and he consented. The operation revealed that the omentum was detached and had become implanted between the ascending colon and the lateral abdominal wall, where it had formed adhesions with the adjoining tissues. Upward it reached to the liver, and below it ended in a pedicle, which showed torsion and the point of which was fastened near the inguinal ring on the right side. The entire omentum with the exception of the narrow attachment had become necrotic. The omentum was removed and the recovery was uneventful. The operative specimen weighed 1,100 Gm. The author describes the results of the histologic examination and in discussing the case history he states that the patient had an inguinal hernia on the right side. He considers this factor significant for the etiology, since persons with inguinal hernia of the right side are predisposed to torsion of the omentum.

59: 929-992 (April 9) 1932

Are There Failures in Preoperative Iodine Treatment of Exophthalmic Goiter According to Plummer-Boothby? A. W. Meyer and C. Atanasof.—p. 930.
*Action of Calcium in Threatening Case of Pulmonary Infarct. R. Hubrich.—p. 934.
Encysted Pseudohernia. A. Oberst.—p. 935.
*Distinct Sign of Certain Fractures of Scapula. A. Comolli.—p. 937.
Drill for Extension Treatment. H. Edelmann.—p. 940.
Chemicals in Organs Following Fatality After Basic Anesthesia with "Avertin." L. Schönbauer and R. Links.—p. 941.
Idem. F. Tiemann.—p. 943.
Thrombosis of Portal Vein Following Operation for Inguinal Hernia. W. Wolf.—p. 945.
Rôle of Vena Azygos and of Vena Hemiazygos in Development of Several Pathologic Processes. A. S. Wischnevsky.—p. 946.
Pyosalpinx in Inguinal Canal with Aspects of Nonreducible Inguinal Hernia. E. Fauvet.—p. 950.

Action of Calcium in Pulmonary Infarct.—Hubrich relates that in a postoperative, embolic, hemorrhagic infarction of the lung, timely intravenous and intramuscular injection of normal calcium gluconate had a life saving effect. He emphasizes the complete absence of reaction in intravenous as well as intramuscular injections. He therefore advises the use of calcium gluconate as a hemostatic, especially in nervous patients with severe hemorrhages and with threatening collapse.

Distinct Sign of Certain Fractures of Scapula.—Comolli points out that the diagnosis of fractures of the surgical neck of the scapula is considered difficult. Because of the lack of distinct signs and because of the nearness of the joint it cannot be readily differentiated from a contusion, from a luxation of the scapula, and from fractures of the upper end of the humerus. Most authorities think that for a definite diagnosis roentgenoscopy is necessary. However, the author observed an unmistakable sign, on which the diagnosis of fracture of the scapula, more particularly fracture of the surgical neck, can be based with certainty. This sign is a typical swelling, which develops in the region of the involved scapula shortly after the trauma. The swelling, which indicates the triangular outline of the scapula, is due to the fact that blood from the fracture gathers before as well as behind the scapula. As a result of the peculiar anatomic conditions this blood cannot escape and a cushion-like swelling, corresponding to the outline of the scapula, is the result. The author cannot state with absolute certainty whether this sign is noticeable in all cases, though in view of the manner in which it develops, this is probable; but in compound fractures with considerable tearing and displacement, it may not be so noticeable.

Rocznik Psychiatryczny, Warsaw

17: 1-260 (Jan.) 1932

Biology of Spirochaeta Pallida. R. Weigl.—p. 1.
Dementia Paralytica and Syphilis of the Organs. W. Nowicki.—p. 14.
Histopathology of Dementia Paralytica. R. Dreszer.—p. 26.
Histopathology of Syphilis of Central Nervous System. Z. Messing.—p. 53.
Correlation of Clinical Picture and Constitution in Syphilitic Psychoses. W. Matecki.—p. 81.
Constitutional Types of Patients in Dementia Paralytica. J. Kirschner.—p. 100.
*Catatonic Syndromes in Dementia Paralytica. B. Bornstein.—p. 104.
Influence of Malarial Therapy on Permeability of Meninges in Dementia Paralytica. J. Dretler.—p. 121.
Treatment of Dementia Paralytica. E. Artwiński and A. Gradziński.—p. 157.
Research on Experimental Syphilis. (Superinfection in Tertiary Syphilis). J. Lenartowicz.—p. 218.

Catatonia in Dementia Paralytica.—Bornstein describes five cases of young adults with dementia paralytica and with catatonic syndromes. He points out the insufficiencies in the theories relating to these syndromes. The psychologic theory (Boestroem) is founded on disturbances of volition and on the analogy with normal life, but it omits the causes of catatonia. The anatomic theory (Wernicke, Kleist, Satio, Kalnin) is not yet uniformly elaborated. From the latest investigations, however, it appears that anatomic changes, alone, cannot be considered as fundamental factors in exciting catatonia in dementia paralytica. De Jong and Baruk see in this syndrome an expression of intoxication, undefined as yet but attacking in the first place the cortex of the brain. The author thinks the last standpoint to be acceptable, namely, that the infection in young adults causes humoral changes, as yet unknown, which by their action on the cortex may, in certain predispositions, provoke catatonic syndromes.

Kazansky Meditsinsky Jurnal, Kazan

28: 1-100 (Jan.) 1932. Partial Index

*Local Anesthesia in Surgery of Biliary Tract. A. V. Vishnevsky.—p. 57.
*Tying Fallopian Tubes and Subsequent Permeability. Kh. Kh. Meshcherov.—p. 66.

Local Anesthesia in Surgery of Biliary Tract.—Vishnevsky states that, in typical cases of disturbance of the biliary tract with a definite diagnosis, the operation of choice consists of an incision downward from below the ribs; in patients with a questionable diagnosis and an obscure clinical picture with regard to the biliary system, necessitating an abdominal exploration, the operation of choice consists of a median incision and local anesthesia according to the method described in the *Kazanskiy Meditsinskiy Jurnal*, 1929, number 9. He believes that local anesthesia makes possible a subserous cholecystectomy and subsequently an hermetic closure of the abdominal incision. Preliminary anesthesia of the gallbladder makes possible a subserous cholecystectomy which under ordinary conditions may be difficult or impossible. In cholemic patients with an intact wrinkled gallbladder containing calculi, transduodenal choledochotomy as well as tying of the cystic duct is the only intervention that makes it possible not only to regulate the passage of the bile into the intestine but also to close hermetically the abdominal incision. The author believes that his method of local anesthesia decreases the chances of hemorrhage. Mobilization of the duodenum and

the head of the pancreas makes this intervention quite simple. The method of progressive infiltration anesthesia together with diffuse impregnation of the tissues not only makes orientation of tissues less difficult but aids in the exposure of the gallbladder and bile ducts, simplifies the subserous isolation of the gallbladder, increases the view of the duodenal area, enables a more careful exploration of the ducts, and makes possible a bloodless mobilization of the duodenum and the head of the pancreas.

Tying Fallopian Tubes and Subsequent Permeability.—Meshcherov describes the technic, the microscopic observations and the general results in the tying of the fallopian tubes in twenty-six female rabbits. Although he does not believe that the results in animal experiments can be carried over to human beings, he concludes that an operation with tying of the fallopian tubes as a method of sterilization of women cannot entirely guarantee against subsequent conception and therefore should not be used for that purpose. In view of the large number (nineteen of his rabbits) of instances of atresia of the tubes, the author concludes that obliteration of the fallopian tubes does not prevent permeability. Closure of the opening at the site of the ligature and subsequent obliteration of the fallopian tubes may be the cause of the yearly increase in the number of ectopic pregnancies.

Terapevtichesky Arkhiv, Leningrad

10: 1-96, 1932

Clinical Aspect of Syphilitic Insufficiency in Aortic Valves. Ya. E. Shapiro.—p. 3.
Changes in Form of Electrocardiogram When Taken Two at a Time. M. L. Soliterman.—p. 12.
*Definite Doses of Digitalis in Various Cardiac Disturbances. D. M. Abdulaev.—p. 21.
Heart and Tuberculosis of Lungs. I. A. Levenson and A. G. Naishtat. —p. 33.
Blood Picture in Endocarditis Lenta. K. A. Dryagin and N. V. Inyushkin.—p. 46.
Cardiodiaphragmatic Symptom Complex in Relation to Accumulation of Gases in Left Hypochondrium. S. I. Lurie and B. M. Shtern.—p. 55.
*Pituitary Extract in Treatment of Gastric Ulcer and Hypersecretion. M. Yu. Rapoport.—p. 65.
Clinical Aspect of Epidemic of Influenza in Leningrad, 1926 to 1930. V. N. Lejnev.—p. 73.
*Constancy in Basal Metabolism. D. Rozenblum.—p. 82.
Alimentary Glycemic Curve and Physical Fatigue. I. B. Shulutko. —p. 84.
Diuretic Action of Merbaphen and Mersalyl. B. Shklyar.—p. 92.

Doses of Digitalis in Cardiac Disturbances.—Abdulaev examined the histories in 500 cases of cardiac disturbance treated with digitalis (pulvis foliorum digitalis) during one year or longer. The material was divided into three groups: Group 1 consisted of patients with decompensated mitral lesions complicated with fibrillary arrhythmia; group 2 was similar to group 1 but the patients had normal cardiac rhythm; group 3 consisted of patients with cardiosclerosis with cardiac insufficiency and fibrillary arrhythmia or normal rhythm. In conclusion the author states that treatment at the onset should consist of large doses of digitalis (0.1 Gm. three times a day) in order to store a sufficient quantity of the drug in the organism. This dose does not have to be administered over a prolonged period; in most cases, sufficient action is evident after from five to six days' treatment. It is necessary to decrease the dosage gradually to 0.05 Gm. two or three times a day and to bring about a bradycardia of from 60 to 70 beats a minute. If the heart beats decrease to less than 70 a minute, it is advisable to interrupt the digitalis for three or four days. Further treatment should consist of doses such that daily administration over a long period would be effective without evidence of toxicity. The author finds this dose to be from 0.1 to 0.15 Gm. a day, depending on the individual. In the treatment of patients with valvular lesions but without fibrillary arrhythmia this may be the beginning dose, but for maintaining the effect a larger dose is necessary (0.05 Gm. three times a day to 0.1 Gm. twice a day). In arteriosclerotic cardiosclerosis it is necessary to remember that digitalis may cause cardiac spasm, degenerative changes in the myocardium and changes in the impulse of the cardiac system.

Pituitary Extract in Treatment of Gastric Ulcer.—Rapoport states that disturbances in the function of the gastrointestinal tract may be understood through the study of the neuroglandular apparatus; that is to say, the endocrine glands and the sympathetic nervous system. Believing that the posterior lobe of the pituitary body influences gastric secretion, the author studied the results following the injection subcutaneously of 1 cc. of solution of pituitary, once a day, twenty minutes before the main meal, and the treatment continued for from four to six days. Examinations made at various intervals after the first injection included a determination of the gastric acidity and the free hydrochloric acid and a study of the secretory and motor functions. He concludes that solution of pituitary results in a decrease in the gastric acidity and the free hydrochloric acid under normal and fasting conditions. In some instances the decrease in acidity is apparent only after several injections (the first may sometimes increase the acidity). The changes in the acidity remain after the treatment has been discontinued. Treatment with solution of pituitary does not bring about those changes in gastric motor activity that would contraindicate such treatment, nor do the doses used cause any accidents. The author does not claim specificity for this treatment; however, since solution of pituitary has the power to inhibit secretion it can be efficacious in the treatment of ulcers, through humoral and especially nervous influence on gastric secretion.

Constancy in Basal Metabolism.—Rozenblum states that he finds no uniformity in the literature with regard to constancy of basal metabolism in the same patient over a prolonged period of time. On himself and a laboratory assistant, he recorded the caloric energy required for twenty-four hours and found that the variations during one year ranged from 10 to 15 per cent of the original value. He believes that fluctations in the metabolic rate due to objective and subjective stimuli should be considered in clinical diagnosis and that the basal metabolism should be observed not at one but at several examinations.

Bibliotek for Læger, Copenhagen

124: 79-113 (March) 1932

Causes of Blindness in Faroe Islands. R. K. Rasmussen.—p. 79.
*Demonstration of Bacillemia. J. Holm.—p. 92.
*Clinical Investigations on Temperature of Skin, Especially in Tuberculosis of Joints and Bones. J. Foged.—p. 107.

Demonstration of Bacillemia.—In 208 patients, mainly with tuberculous disease, Holm failed to demonstrate tubercle bacilli in the blood on cultivation according to Löwenstein's method; in forty-two of these, tubercle bacilli could not be demonstrated by simultaneous inoculation of the precipitate in guinea-pigs. In eighteen patients with progressive pulmonary tuberculosis in the third stage, bacillemia was not demonstrable by direct inoculation of the blood in guinea-pigs and cultivation in Besredka's substrate. In thirty-nine patients, chiefly with tuberculous disorders, the blood was examined after treatment with citrated water; tubercle bacillemia was established in two cases. The author concludes that tubercle bacillemia is not a frequent occurrence in tuberculous disease.

Temperature of Skin, Especially in Tuberculosis of Joints and Bones.—Foged states that in cases of active tuberculosis of the knee, ankle and foot there is an abnormal local increase in the temperature of the skin. In tuberculosis of the elbow, wrist and hand the symptom is less constant. The numerical value of the symptom corresponds to the degree of the disease. Measurement of the local temperature of the skin is only a supplementary examination, to be evaluated in relation to the other clinical results.

Ugeskrift for Læger, Copenhagen

94: 327-348 (March 31) 1932

Nervous Patients and Their Treatment. C'cn. P. Levison.—p. 327.
*Investigations on Mortality from Diphtheria in Different Seasons. P. H. Andresen.—p. 335.
Ambulatory Treatment of Tuberculosis of Skin. J. Olesen.—p. 339.

Mortality from Diphtheria in Different Seasons.—Andresen's examination of the annual official health reports for Copenhagen for the last thirty years showed the mortality from diphtheria to be definitely higher in March, April and May than during the rest of the year. Study of the diphtheria case reports from Blegdam Hospital for one year also revealed a notably increased mortality in the spring months, the relative variations during the year closely agreeing with those shown in the health report for the same year.